A Bibliography of Publications about the Fast Multipole Method

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Title word cross-reference

1 [TPKP12]. **$15K** [WGL+98]. 2 [GROZ04, HHL+21, Lab98, Liu08, ON08a, RS94, VGZB09, WYW05, WXQL08]. 3 [BDMN03b, BHR04, BHGR04, CDM98, DDL13, Dar02, GP08, GD03, HLN24, JMC97, LHYS24, NW89, NH97, ON08b, PG94, Pta21, QCG15, Sar03, TCD17, WY05, WLL+07, WZC+17, WZC19, WCZ+20, WZC21a, WZC21b, iYNK02, YB01, ZY05]. **$50/Mflop** [WSB+97]. **$7.3/Mflops** [KFM99]. ^{3} [PG96b]. $h = 0$ [DNS90]. H^2 [HXC21]. K [MG05, CK95b]. $K(x, y) = K(x - y)$ [LX22]. LU [MG07]. m [YRB16]. $\mathbf{R^n}$ [CBN02]. $\mathcal{H}_2$ [Bör23]. N [Aar85, Alu94, APG94, Alu96, AGPS98, AAL+01, And99, Ano94a, Ano94c, ADB94, ADBGP99, Bag02, Bar86, BADP96, BAAD+97, BADG00, BAD01, BS97, BN97, BOX00, Bor86, BDS07, BME90, BME93, BEM94, DH86, Dem95, Dem96a, Dem96b, DHM03, FRE+08, FM95, FM96, FQG+92, HTG02, HJ96, IFM09, IHM05, Kat89, KFM99, KFMT00, KMT94, LKM02, Liu94, MIES90, MTES94, MT95, MD12, MG05, MMC99, McD97, NMH06, Oku96, PGB05, Per99, PRL03, SWW94, Sal96, Sha06, SP99, Sin92, SHG95, SHT+95, SRK+12, TMES94, TWYC06, TYON12, TYNO12, Ten98, TL14, WPM+02, WS92, WS93, WN14, WSWL95, WSH+12, Xu95, Yin15, YF05, Ano94b, CK95a, CK95b, GKS94, GKS98, Gre90b, HNY+09, HN10, HS95, INS+20, KK95, Xue98]. $N \log N$ [AO10, DYP93, ADO11]. ν [SH07]. $O(log_2 n)$ [JBL02]. $O(N)$ [BSL11, Deh02, DTG96, OKF14, Xue98].

$O(N \log N)$ [BH86, FGM11, PJY95]. $r^{-\lambda}$ [CJ05]. $R^{-\nu}$ [SH07]. $r \pm 1_{12}$ [Pan95]. t [MPZ21].

-Body [Ano94b, CK95b, GKS94, KK95, BEM94, CK95a, GKS98, Gre90b, HNY+09, HN10, HS95, INS+20, Xue98, AGPS98, AAL+01, And99, ADB94, Bag02, BADG00, BS97, BN97, BOX00, FM96, HTG02, HJ96, KFM99, KFMT00, SWW94, SHG95, SHT+95, Ten98, WPM+02, WS93, Xu95, Yin15, YF05, Aar85, Alu94, APG94, Alu96, Ano94a, Ano94c, ADBGP99, Bar86, BADP96, BAAD+97, BAD01, BDS07, BME90, BME93, DH86, Dem95, Dem96a, Dem96b, DHM03, FRE+08, FM95, FQG+92, IFM09, IHM05, Kat89, KMT94, LKM02, Liu94, MIES90, MTES94, MT95, MD12, MG05, MMC99, NMH06, Oku96, PGB05, Per99, PRL03, Sal96, Sha06, SP99, Sin92, SRK+12, TMES94, TWYC06, TYON12, TYNO12, TL14, WS92, WN14, WSWL95, WSH+12]. **-D** [HHL+21, NH97, WZC21b, BDMN03b, CDM98, DDL13, Dar02, GROZ04, GD03, JMC97, LHYS24, NW89, Pta21, Sar03, TPKP12, WYW05, WZC19, WCZ+20, WZC21a, YB01, ZY05]. **-dimensional** [Lab98]. **-Matrices** [Bör23]. **-means** [MG05]. **-Nearest-Neighbors** [CK95b]. **-SNE** [MPZ21].

1 [FMI+93, HFKM98, KMT94]. **1.349** [MFK00]. **10** [WGL+98]. **10th** [PA02]. **11th** [Ano95b]. **'12** [Hol12]. **12th** [Ano96]. **131** [Dac10]. **13th** [Ano97a]. **14** [BEM94]. **15th** [BR93]. **190** [HN10]. **1986** [HM86]. **1987** [AG88, Rod89]. **1990s** [Ano90]. **1992** [Ano92, IEE92b]. **1993** [IEE93]. **1994** [IEE94a, IEE94c]. **1996** [Ano97b, IEE96c]. **1997** [ACM97, HTA+97, IEE97]. **1999** [ACM99]. **19th** [MBA97]. **1A** [OMH+94].

2 [BCAD06, GA96b, MHI07, Spr05]. **2-D** [GA96b]. **2-Pflops** [MHI07]. **20.5Gflops** [MD12]. **20.5Gflops/W** [MD12]. **2003** [ACM03, CHJN03]. **2009** [ERT12]. **2011** [LCK11]. **2012** [Hol12]. **20th** [Cip00]. **240-Processor** [WWF02]. **25th** [Ano95a]. **29.5** [MKFD02]. **2A** [EIM+92]. **2D** [CCZ97]. **2nd** [HOST95, Mak93].

3 [OME+92]. **3-D** [WY07a]. **3051-66** [YB97]. **33rd** [IEE92a]. **3D** [LO96b].

4 [Ano94a, FM95, FM96, MTES94, MT95, TMES94]. **42** [HNY+09].

5 [KFM99, KFMT00]. **512** [MHI07]. **512-core** [MHI07]. **512-Gflops** [MHI07].

6 [MFK00, MKF01, MKFD02, MFKN03].

8 [MD12]. **'88** [KK88]. **8th** [BGPW00].

'90 [IEE90]. **'91** [Wel91]. **'92** [IEE92b]. **'93** [IEE93]. **'94** [IEE94c]. **94e** [BEM94]. **'96** [ACM96]. **967** [MB16]. **98** [BGPW00].

= [Ano97b].

A-posteriori [XTH09]. **above** [GSC01]. **Accelerate** [CS98b, LSCM96, LKM02, TYNO12]. **Accelerated** [BSSJ23, BCL+92, EB96, SH07, WZC+17, WN14, AC17, BHE+94, BHER94, EB94, EG01, GD09, GODZ10, GAD13, Ham11, JH08, LCM07, MR07, QCG15, Tak14, WLL+07, WVK21, ZD05]. **Accelerating** [GHRW98, MG09, WC94a]. **Acceleration** [CKE08, HZH+18, LCZ07, SWW99, VCM00, BK96, KCF+05, SGD+04]. **accelerator** [ATMK03, MD12]. **accomplishments** [Ano90]. **Accuracy** [CDCD97, DY98, CB09, GL96, JP89, RKRRL22]. **Accurate** [BSSJ23, SRPD06, AHLP93, Dac06, EG09a, EG13, HHKP09, HHM19, ZGD+16]. **achieves** [WGL+98]. **Achieving** [SSF96].

ACM [ACM97, IEE02, Kar95]. **ACM/IEEE** [ACM97, Kar95]. **acoustic** [AD05, BSL09, BN07, CWK08, GF06b, GF06a, HW10, TCW08, WJYO06, ZGD+16]. **acoustic-structure** [GF06b, GF06a]. **acoustics** [FPG05, OLL04]. **Acta** [Ise97]. **Adaptation** [McK96]. **Adapted** [NT96, NT94]. **adaption** [BLA05]. **Adaptive** [BT95, BSSJ23, BSL09, BS97, BFO99, GE13, GP08, HEGH14, KK95, NPR93, PD15, SHHG93, SHT+95, Ten98, ZT07, AC17, BCP08, CGR88, CGR99, CHL06, CFR10, FOCB96, GY08, GL96, GCH+18, HJZ09, LCL+12, LB92a, LCHM10, LCHM13, PRL03, YBZ04, ZHPS10]. **addition** [HC08, KSC99]. **address** [HS95]. **Advanced** [HM86, Win95, dCGQS06, TYON12]. **Advances** [BLA05, SM05]. **advantage** [Ano92]. **Adventures** [CDCD97]. **affinities** [KSS10]. **AFMPB** [LCHM10, LCHM13]. **after** [ZQSW94]. **aggregated** [YB21]. **algebra** [CB20]. **Algebraic** [Car09, GA24, YTK14, Of08, PRT92]. **Algorithm** [AiIS+21, BS00, Bor86, BFO99, CDM98, CSMCxx, Deh02, DD95, EB96, JMC97, JMBC98, KK95, Lea92, LO96a, MBS+00, MG11, MPPA96, MPZ21, NPR93, OKF14, SLC96, SLC97, WC94b, WS93, WN14, YR99, YRB16, ZBS15, AR91, Alu96, AP99, ATR+12, BH86, Bar86, BJWS96, BSS97, BCL+92, BP03, BCOY94, BP93, CGR88, CG04, CC13, CGR99, DRS96, EGHT97, EB94, EG08, EG09a, EG09b, Erg11, EG13, GH08, GDDC08, GKD09, GR87, GR88b, HS08, HSA91, HYS21, HC10, HR98, INS+20, JBMC98, KM00, KK16, KS98a, LM02, LDB96, LB91, LB92a, LB92b, LZL04, LGQZ21, LHL08, LHYS24, LC93, LC94, LWM+02, MG07, MG09, MCBB07, NW89, NKV94, NT09, OR89, OLLL03, OLL04, PJY95, PRL03, Rah96, RCWY07, Sar03, ST02, SK04, Sud04, TCW08, TC09, WK18]. **algorithm** [WJYO06, WL96, WCLD21, Xue98, YRGS13, YBZ04, Yin06, YB12, ZCG00, ZBS11, ZCL+98, ZB95, ZD05, Lea92, MB16]. **Algorithms** [APG94, AGPS98, Ano94c, ADBGP99, BF78, Bha97, BN97, Boy92a, CK95a, Cip00, DS00, DGR96, LCE+06, Liu94, MBS+00, MBS15, Pri94, Ten98, BCP08, BHE+94, BHER94, BME93, BEM94, DHM03, Ess95, Gre94, K+96, Mak93, PRT92, Pel98, Win95, Yin09]. **ALiCE** [HTG02]. **All-to-All** [HP95]. **almost** [FL13]. **Alpha** [WGL+98]. **Alpha/Linux** [WGL+98]. **Alternative** [AD05, CL91]. **AMBER** [DK93]. **AMBERCUBE** [DK93]. **AMS** [RSS96]. **Analyse** [Ano97b]. **analyses** [Ham11, XWY+08]. **Analysis** [AP99, AP00, BH89, ERT12, HAS02, Hol12, JMBC98, LCK11, Sat10, VTG91, Ano97b, Car07, Car09, Dar00a, EG13, JBMC98, JKCGJ08, KSC99, NH97, OC03, OLL04, Pel98, RC97, RSS96, SGD+04, SS07, Sud04, WY05, WY07b, WY07a]. **Analytic** [ABD04, BSSF96a, LCD14, BSSF96b, DDL13]. **Analytical** [Gus98, LBGS16, CC13]. **analyze** [SHM98]. **Analyzing** [CSMCxx, JMC97, HHL+21, HLN24]. **Angeles** [AG88, Rod89]. **Anger** [CC04]. **angular** [GY08, WHG96b]. **Animated** [BT95]. **anisotropic** [AYO20]. **Ankara** [Ano97b]. **Annual** [Ano95b, Ano96, Ano97a, IEE92a, Mak93, PA02]. **anomalies** [ON09a]. **Antennas** [IEE94a, IEE95, IEE96a, IEE97, MI95]. **anterpolation** [Sar03]. **Appendix** [Ano90]. **Application** [LSCM96, LJ96b, LJ96a, NH97, SGG+04, TCD17, VOD08, WSW+95, DHM03, ESRS01, GROZ04, HNO06, LWM+02, SGD+04, TCD20, YR98]. **Applications** [CK95b, CCKL09, OSW05, RSBS19, BHER94, HNY+09, LGG+13, Of07, ON08b, PD89, ZY05, dCGQS06, TDBEE11]. **Applied**

[BGPW00, HDG+15, RSS96, Ano95b, Ano96, Ano97a, BN07, JdR+18, MB05, OMC08]. **Approach** [ÁC94, SHMC97, WC94a, AHLP93, BWS+95, CB20, KAN95, KAN96, PGB05, SHM98, WJGHG96a, YS18]. **Approximate** [Beb06, CDGS03, CDGS05, CPD17, FPG05, Rei99, MG09, PRT92, YGSR01]. **approximating** [LX17]. **Approximation** [ADO11, LSCM96, AO10, GP08, ST06]. **approximations** [CK20, DC07, HW11, Lem04, RŠŽ09]. **Apr** [Dem95, Dem96a, Dem96b]. **April** [PA02, Wel91]. **Aqueous** [GP93]. **Arbitrary** [LS93, WZC+17, EIM+92, GSC01, GL96, KS98b, LM02, Tau03b, YRGS13]. **Architectural** [DRS96]. **Architecture** [Lea92, NMH06, Sin92, TYON12, TYNO12]. **Architectures** [MPZ21, SHG95, HGD11, INS+20, LCL+12, MMC99]. **arithmetic** [LKM02]. **armed** [KLM+09]. **array** [CKS91]. **article** [Dac10]. **ASCI** [WSB+97]. **aspects** [CHJN03]. **assemblies** [CPP93, LDB96]. **assessment** [LGQZ21]. **Astrophysical** [Ano94a, KFM99, MTES94, MT95, MFKN03, WS92, HN10, TMES94]. **Astrophysics** [FQG+92, HNY+09]. **asymptotic** [BK96, Dar00a]. **atom** [DKG92c, FRE+08]. **Atomic** [ÁC94, DKG92a, Kon93]. **Atoms** [McD97, Pie93]. **August** [IEE96b, RSS96]. **Australian** [Ano92]. **Automatic** [RGKM12]. **Autotuning** [HEGH14]. **Avalon** [WGL+98]. **Axial** [SMC97, SM97].

B [Ano90]. **balance** [BAAD+97]. **Balanced** [PD89]. **Balancing** [SHT+95, Ten98, FG96, MG05, PGdS+15]. **Baltimore** [IEE96a, IEE02]. **Banff** [ERT12]. **Barnes** [AAL+01, Ano94b, BJWS96, BGLM05, GKS94, GKS98, INS+20, MPZ21, SHT+95, WSH+12, ZBS11, ZBS15]. **barrier** [WHG96b]. **barycentric** [LX23, WVK21].

Based [AAB+17, CD13, CCFG23, GSS98a, GSS00, MPPA96, YB01, AO10, BLA05, BN98, BHGR05, FMI+93, GROZ04, GKD09, GP08, GA24, HHKP09, HLL08, HHL+21, HLL+18, KKLZ23, LM02, LDB96, LX23, Liu08, NN12, Sel22, Sud04, Tak14, WL96, WCZ+20, WVK21, YCM25, ZHPS11, ZGD+16]. **bases** [FBHJ04, TW03]. **basis** [BLA05, BL97, BN98, BCR01, Buh03, CBN02, GH08, GDDC08, GD07a, LCZ07, Yin06]. **BE** [SGD+04]. **Beach** [IEE95]. **Behaviour** [ON09a]. **Beltrami** [SHMC97, SM97, SMC97]. **BEM** [Sel22, And08, BN07, FPG05, GF06b, GF06a, HKS05, HLN24, MB05, NH97, Pta21, Tau03a, WYW05, XWT09, XTH09, XWY+08, hYtWbWL08, YBK+11, ZY05, ZGD+16]. **BEM-FEM** [MB05]. **Beowulf** [WWF02]. **Best** [Cip00]. **better** [GA24]. **Between** [AAB+17, Pie93, CDM98, RŠŽ09]. **beyond** [ZB14]. **Bianisotropic** [SHMC97, SHM98]. **BIE** [Liu08]. **biharmonic** [GD06]. **billion** [YBK+11]. **binary** [PD89]. **binding** [KSS10]. **biomacromolecular** [SKT94]. **Biomolecular** [SRPD06, YBK+11, GCH+18, KP08, LCM07, LCHM10, LCHM13, SKT93]. **biomolecules** [AO10, FGM11]. **Biot** [Ros06]. **black** [FD09, MFK00, WCLD21]. **black-box** [FD09, WCLD21]. **BLAS** [CFR08, CFR10]. **Blob** [DD95]. **blobs** [HM95]. **block** [CG04]. **block-diagonal** [CG04]. **blocking** [TSIM16]. **Blue** [FRE+08]. **BO12** [LB91]. **board** [ATMK03]. **Bodies** [BT95]. **Body** [AGPS98, AAL+01, And99, Ano94b, ADB94, Bag02, BADG00, BS97, BN97, BOX00, CK95b, FM96, GKS94, HP95, HTG02, HJ96, KFM99, KFMT00, KK95, Pie93, SWW94, SHG95, SHT+95, Ten98, WPM+02, WZC+17, WS93, Xu95, Yin15, YF05, Aar85, Alu94, APG94, Alu96, Ano94a, Ano94c, ADBGP99, App85, Bar86, BADP96, BAAD+97, BAD01, BDS07, BME90, BME93, BEM94, CK95a, DH86, Dem95, Dem96a, Dem96b, DHM03, EIM+92, EFT+93, FRE+08, FM95, FQG+92, GKS98, Gre90b, HFKM98, HNY+09, HN10, HS95, IFM09, INS+20, IHM05, Kat89, KMT94, LKM02, Liu94, MIES90, MTES94, MT95, MD12, MG05, MMC99, NMH06, OME+92, Oku96, PGB05, Per99, PG96a, PRL03, Sal96, Sha06, SP99, Sin92, SRK+12, SCM+90, TMES94, TWYC06, TYON12, TYNO12, TL14, WS92, WN14, WSWL95]. **body** [WSH+12, Xue98, ZBG15]. **Bologna** [Ano95a]. **Boltzmann** [BH03, LCHM10, LCHM13, WZC21b]. **Book** [Gav11]. **Born** [ADO11, HC10]. **Boston** [K+96]. **both** [HNY+09]. **Boulevard** [ACM99]. **boundaries** [Mil08]. **Boundary** [BSSJ23, BH03, Bör23, BR93, Bre04, LJ96b, LJ96a, MBA97, OSW06b, SS07, Sel22, WZC+17, WMOZ22, WSW+95, YRB16, AP03, Atk97, BSL09, Bes00, BWS+95, BHR04, BHGR04, Car06, Car07, CWHG97, CWK08, DMC20, Gas97, GBMN06, Gav11, GOS99, GP08, GD09, GODZ10, GAD13, Ham11, HHL+21, KMC09, KCF+05, LS05, LOSZ07a, LOSZ07b, LCQF18, LHL08, Lin95, Liu08, Liu09, LC94, Mil08, OSW05, OSW06a, Of08, OKS09, ON08a, ON09a, ON09b, PN95, QCG15, RS20, RŠŽ09, SGG+04, Sat10, SKT93, Sin95, Tak14, TCD17, TCD20, TW03, Tau04, VGZB09, WY05, WY07b, WY07a, WLB22, WSWL95, XJM08, Yin09, iYNK02, YAO18, YAO20, YSM05, BR93]. **Boundary-Integral** [LJ96b]. **boundary-value** [Lin95]. **Bounds** [GSS98a, GSS00, WK18]. **box** [FD09, WCLD21]. **breast** [ES04]. **Breit** [JdR+18]. **Bridging** [AAB+17]. **Broadband** [WJYO06, GD09]. **Brownian** [DHM03]. **Building** [TD09]. **buried** [ESRS01, GSC01]. **Burton** [Sel22].

C [BGLM05]. **CA** [B+95, Ano95b, Ano96, Ano97a, Kar95, Wel91]. **Calculate** [BVW96, BV96b, BV96a, KMC09]. **calculated** [DM90, YAO18]. **calculates** [ATMK03]. **Calculating** [BFO99, DM90, LCHM10, LCHM13, SKT94]. **Calculation** [Deh02, HA17, NT96, BH86, BH03, FGM11, KKLZ23, LDB96, OLLL03, RCWY07]. **Calculations** [BGGT90, Ber95, CDGS03, CDGS05, KSS10, KS11, PNB94, AiIS+21, CSA95, CK20, KK16, KS98a, LCM07, PA14, SKT93, WHG96a, WJGHG96b, WHG96b]. **Calderon** [NN12]. **California** [ACM97, Rod89, Ful97, IEE95, PA02]. **Canada** [IEE97, HB93]. **cancer** [ES04]. **Canonical** [LCP93, KM00]. **Capacitance** [YB01, JC04, NW89]. **capacitive** [SGD+04]. **Cardinal** [Boy92b]. **Carlo** [ESRS01]. **Carrier** [SB98]. **Cartesian** [CSA95, CS82, HF92, HLL+18, Le 97, SH07]. **Case** [BGLM05, GROZ04, PSPS95, PSS95]. **Cauchy** [CL12, LCD14]. **CE2014** [MBS15]. **cell** [CC13, CWD08, DKG92a, DKG92c, GDK89, KS98b, KN95, LM02, FL13]. **cells** [AYO20, DKG92c]. **Center** [ACM99, Hol12, IEE90, Kar95, Pan95, MFK00]. **central** [EIM+92]. **Century** [Cip00]. **challenge** [Bha97]. **channels** [Gre90a]. **characteristic** [GDDC08]. **Characterization** [CB09]. **Charge** [ÁC94, CC13, GY08, KKLZ23, Kan15]. **charge-** [CC13]. **charged** [AB95, CPP93, KN95]. **Charges** [ÁC94, CDJ07, DC07]. **Chebyshev** [Boy92a, LRW95]. **check** [RKRRL21]. **Chem** [Dac10]. **Chemistry** [ADG96, Mat95, SPS96, Les96]. **Chennai** [IEE98]. **chips** [MHI07]. **Chiral** [SMC97, SM97, SHM98]. **Christoffel** [BT03]. **cibles** [Ano97b]. **City** [Hol12, RSS96]. **Clara** [Ful97]. **class** [PA14]. **classical** [Gre94, Rok85]. **close** [ZD05]. **closed** [BHR04]. **closest** [CK95a]. **Closet** [SW94]. **Cluster** [PNB94, HN10, LHYS24, WGL+98, YNS+09].

clustering [MG05, SWJ$^+$05]. **Clusters** [ADB94, BP88, HL15, ZBS15, GIS98, GD05, Kon93]. **Coarse** [GB11, PA14]. **coarse-grained** [PA14]. **Coarse-graining** [GB11]. **coated** [ZCG00]. **COBE** [ZQSW94]. **Code** [ADB94, Bag02, BH89, Bar90, BADG00, CDM98, CWA14, IFM09, SLCL98a, SLCL98b, BADP96, BAAD$^+$97, BAD01, BCAD06, DMC20, Dub96, GY08, GDK89, JdR$^+$18, JKCGJ08, JP89, LWM$^+$02, PD89, PG94, Spr05, Wam99, WSH$^+$12]. **Codes** [SWW94, WSW$^+$95, NMH06, Pud16, WSWL95]. **Coefficients** [GD03, Beb06, FST05, KS11]. **Cold** [ZQSW94]. **collective** [BSvdG$^+$94]. **Collision** [BT95, WN14, JdR$^+$18]. **collisional** [TYON12]. **collisionless** [TYNO12]. **Combined** [JMBC98, AiIS$^+$21, KM00]. **Combining** [CDGS03, CDGS05, CWD08, DDL13, DM12, FLZB97a, FLZB97b, GDDC08, PRT92, ZB95]. **Comment** [KAN96, WJGHG96a]. **Comments** [PG96b]. **Communication** [HP95, YTK14, BSvdG$^+$94, IYK16, KP08, SS89, TPKP12]. **Communications** [KP05a, AiIS$^+$21]. **Companion** [HDG$^+$15]. **Comparison** [BN97, CDM98, EG09a, RŠŽ09, WPM$^+$02, Ess95, SKPP95]. **competitive** [Ano92]. **Complement** [MG11]. **Complex** [CSMCxx, MGM95, MBS15, SLC96, SLC97, Syl03, AC17, BGGC06, CC10, CC12, NW89, RS20, Rei99, TW03, ZB95]. **complexes** [KSS10]. **Complexity** [JBL02, Pan92, YTK14, Dar00a]. **component** [CKB11, JKCGJ08]. **composite** [EG13, GM94, Pta21]. **Composites** [SMC97, GH98, WY05, WY07a]. **Comprehensive** [ÁC94]. **compressible** [ECL02]. **Compression** [YGSR01, XTH09]. **Comput** [BEM94]. **Computation** [Gue97, GD03, GD05, GODZ10, McD97, MSV92, Pie93, YRGS13, ATMK03, AO10, FOCB96, TXL19]. **Computational** [Bat03, BGPW00, JBL02, Kat89, Les96, Mat95, MBS15, TDBEE11, Ano95b, Ano96, Ano97a, OMH$^+$94, SM05]. **Computationally** [KM00]. **Computations** [ERT12, Pan92, KAN95, KAN96, OKS09, Syl03, VOD08, WJGHG96a, YF98]. **Computer** [AT87, Ano94a, BGGT90, BP88, CKE08, FM96, HE88, IEE92a, KFMT00, MTES94, MFKN03, Bar86, EIM$^+$92, EFT$^+$93, FMI$^+$93, FM95, HFKM98, HGS90, KMT94, MIES90, MT95, MHI07, OMH$^+$94, OYK$^+$14, OME$^+$92, SCM$^+$90, TMES94]. **Computers** [FHM99, LCP93, MT98, DK93, LBI$^+$97, NKV94, OCK$^+$03]. **Computing** [ACM97, B$^+$95, BGI$^+$99, HTA$^+$97, Hol12, IEE94b, IEE96b, IEE98, LCK11, Mat95, PA02, SHMC97, WWF02, WSW$^+$95, CGL03, CPP93, IYK16, MHI07, MMC99, PRT92, Rod89, SH07, Xue98]. **concise** [PJY96]. **condition** [YAO18, YAO20]. **conditions** [CWHG97, SKT93, Sin95]. **Conducting** [GA96a, HAS02]. **conduction** [RO04]. **Conference** [ACM96, ACM97, Ano92, Ano95a, B$^+$95, BR93, HTA$^+$97, Hol12, IEE94b, IEE96c, IEE98, IEE02, Kar95, KK88, LCK11, MC92, MBA97, Rod89, Wel91]. **conformal** [OR89]. **Congress** [BGPW00]. **congressi** [Ano95a]. **conjunction** [CCKL09]. **connected** [GGM93]. **Connection** [BME90, WS91, ZJ91]. **conquer** [CG04]. **conserving** [CC13]. **constant** [Rei99]. **Constrained** [PGB05, Sal96]. **Constructing** [BF78]. **construction** [HHKP09]. **constructions** [Pud16]. **containing** [WYW05]. **continued** [Dem95]. **continuous** [BS19, FGM11, ŁBGS16, MSS20, WJGHG96b]. **continuum** [BCM02]. **Contour** [Sch94, VCM00, ZGD$^+$16]. **control** [GKD09]. **controlled** [Dac09, Dac10]. **controls** [JP89]. **Convention** [ACM99, Hol12, Kar95]. **Convergence**

[FDvW21, VTG91, Lab98, RO04]. **convolution** [BKM09, HW10, PSN04]. **cooperation** [ATMK03]. **Coordinate** [BF78]. **coordinates** [HF92]. **Copper** [MC92]. **core** [HYS21, INS^{+}20, LHYS24, MHI07]. **Corrected** [Dac10, GORV21]. **correction** [JH08]. **corrections** [MCBB07]. **corrector** [TWYC06]. **correlated** [Sal96]. **Correlations** [ZQSW94]. **Cosmological** [Bag02, BH88, IFM09, YF05, Spr05]. **Coulomb** [ADG96, BFO99, CFH89, DNS90, DKG92a, DKG92b, DKG92c, DTG96, GGM01, GH02, HJZ09, HLL^{+}18, KS98a, SPS96, SSF96, ZHPS10]. **Coulombic** [HA17, PG96b, SKT93]. **Coupled** [LS05, MBS15, PNB94, SGD^{+}04, NMDK99, RSBS19]. **Coupling** [BDMN03a, BDMN03b, Dar02, DM07, GBMN06, MB05]. **course** [BG97]. **CPU** [HEGH14]. **crack** [iYNK02]. **cracks** [ON08a, WYW05]. **CRAY** [BAAD^{+}97]. **creeping** [Kro99, Kro01, Kro02]. **Cross** [Gue97, GP08]. **Crystal** [MPPA96]. **crystals** [ON08b]. **CS** [Dem95, Dem96a, Dem96b]. **Cubic** [WWF02]. **CUDA** [KKB^{+}21]. **cultura** [Ano95a]. **Current** [CGL03, Les96]. **curved** [GH08]. **Curves** [BSSJ23, STZ14]. **Custom** [PA02]. **cutoff** [KLM^{+}09]. **cutoffs** [DKG92b]. **cylinders** [CG97, ZCG00]. **Cylindrical** [SHMC97, SMC97, SM97, SHM98].

D [HHL^{+}21, NH97, WZC21b, BDMN03b, BHR04, BHGR04, CDM98, DDL13, Dar02, GROZ04, GP08, GD03, GA96b, HLN24, JMC97, Liu08, LHYS24, NW89, ON08a, ON08b, PG94, Pta21, QCG15, RS94, Sar03, TCD17, TPKP12, VGZB09, WYW05, WY05, WY07a, WLL^{+}07, WXQL08, WZC^{+}17, WZC19, WCZ^{+}20, WZC21a, iYNK02, YB01, ZY05]. **Dame** [IEE96c]. **Dangers** [BS93]. **Dark** [ZQSW94]. **Data** [AAL^{+}01, And99, BGLM05, HJ96, LY14, NPR93, SS89, SHT^{+}95, WPM^{+}02, BADP96, BAAD^{+}97, DR95, KP08, LOSZ07a, RŠŽ09, WS92, YGSR01]. **Data-driven** [LY14]. **Data-Parallel** [HJ96, NPR93]. **data-sharing** [BADP96]. **data-sparse** [LOSZ07a]. **databases** [Mak93]. **DC** [IEE94c]. **debugging** [RC97]. **December** [Ano92, IEE98, Kar95, K^{+}96, Rod89]. **Decomposition** [CK95b, BJWS96, BP03, BCOY93, BCOY94, CvHMS94, CWD08, LM02, OSW06b, RTA^{+}08, ZT07]. **Decoupled** [PGdS^{+}15]. **deferred** [JH08]. **deformable** [Ros06, ZD05]. **della** [Ano95a]. **Delta** [FQG^{+}92]. **Dense** [CPD17, GSS98b, BGGC06, CG97, PG94]. **densities** [GY08]. **Density** [ÁC94, BS19, LBGS16, PNB94, WWF02, CK20, KAN95, KAN96, MSS20, WJGHG96a, WJGHG96b]. **dependence** [RC97]. **dependent** [MD98, MSS20]. **deployment** [FL13]. **Derivation** [WHG94]. **derivative** [BN07]. **derivatives** [BSSF96b]. **Derive** [RGKM12]. **Descent** [JMC97, JMBC98, ESRS01]. **Descent-Fast** [JMBC98]. **description** [HF92]. **Design** [BGI^{+}99, Lea92, ZBS15, And08]. **detect** [TD09]. **Detection** [BT95, ESRS01, JdR^{+}18]. **Determination** [PNB94, Dac06]. **Developer** [IEE96c]. **Development** [ATMK03, TDBEE11]. **developments** [CC15]. **Diagonal** [Rah96, AP99, CG04, ESM98, KSC99, Rok98]. **Diagonalizations** [HC08]. **Diego** [Kar95]. **Dielectric** [BVW96, MG11, CDJ07, DC07, EG09a, Erg11, JBMC98, WZC21b, ZCG00]. **difference** [LC14]. **different** [BME93, BEM94]. **Differentiation** [DGR96, KLZ^{+}06, TXL19]. **Difficulties** [BSS97]. **Diffusion** [BSSJ23, CM06, KP08, STZ14]. **digest** [IEE94a, IEE95, IEE96a, IEE97]. **DIMACS** [Bha97]. **dimension** [MR07]. **Dimensional** [JMBC98, LS93, Pri94, SC95, WSW^{+}95,

BSL09, BL97, BCR01, CWK08, CC10, CC12, ESRS01, ES04, ECL02, ESM98, GH98, GD09, Kro01, Lab98, LCQF18, LGQZ21, NT09, OLLL03, PSPS95, PSS95, RRR03, SK04, Tak14, TC09, TG08, WY07b, WSWL95, XJM08, YR98, YB97, YAO20]. **Dimensions** [CS98a, LO96a, McK96, Nil04, RRR05, SL91, BPT07, CGR99, CHL06, CCG+06a, CCG+06b, EG01, GR88a, GR97, GH02, GD06, LB92b, MCBB07, Rok90, Rok98, Sel22, SKPP95, TSIM16, YBZ04, SL97a]. **dipolar** [CPP93, CFH89, KN95]. **Direct** [Aar85, CPD17, BME90, BME93, BEM94, FL13, GL96, GA24, LHL08, NMH06]. **direction** [HM95]. **Directional** [BPT+14, CCFG23]. **directions** [YAO20]. **Dirichlet** [GGM93, Mil08]. **disciplinary** [WSH+12]. **discontinuity** [RSBS19]. **discretization** [BDMN03a, BDMN03b, Dar02, GBMN06]. **discretizations** [Beb06]. **Discretized** [VTG91]. **dispersions** [CG97]. **displacement** [RSBS19]. **distorted** [HC10]. **Distributed** [ÁC94, Bör23, IEE96b, MB16, SRPD06, YB01, BCOY93, DK93, GB11, HGD11, KP05b, LBC91, LMCPP92, MMC99, MRH14]. **Distributed-Memory** [MB16, DK93, LMCPP92]. **Distribution** [Alu94, APG94, AGPS98, Ano94c, BAAD+97]. **Distribution-Independent** [Alu94, APG94, AGPS98, Ano94c]. **divide** [CG04]. **divide-and-conquer** [CG04]. **DNA** [FOCB96]. **domain** [BCOY93, BCOY94, CWD08, GP08, LM02, Liu08, LCZ07, Mil08, OSW06b, OFH+08, RŠŽ09, VW02]. **domains** [BHR04, GGM93, GK04, RS20]. **Don't** [Bar90]. **doubly** [GK04]. **doubly-periodic** [GK04]. **DR** [MHI07]. **DREAM** [OMH+94]. **DREAM-1A** [OMH+94]. **driven** [BSL11, LY14]. **drops** [ZD05]. **dual** [CCKL09, LCQF18, Liu08, WVK21]. **dual-level** [LCQF18]. **Dynamic** [HEGH14, BAAD+97, CK95a, FG96, MG05]. **Dynamical** [SWW94, WSWL95]. **Dynamics** [BGGT90, BHGS90, BP88, CDCD97, HM86, JBL02, LCP93, MPPA96, NT96, OKF14, Sch94, TDBEE11, WLMP99, ATMK03, AiIS+21, BSL11, BAL91, BSS97, BCL+92, BHE+94, BHER94, BCOY93, BCOY94, BP93, CvHMS94, DK93, EGHT97, FMI+93, GDK89, GKZ07, HGS90, Ich02, KM00, KP05a, LM02, LBC91, LBI+97, LMCPP92, LWM+02, LRJ+99, NKV94, NT94, OMH+94, OYK+14, OP07, PGB05, SF18, Ske89, VGZB09, VCM00, WS91, Win95, ZB95]. **DynamO** [BSL11].

Economization [LRW95]. **Editor** [GW98]. **Editors** [Cip00, MBS+00, DS00]. **EEG** [KCF+05]. **effects** [AB95, BPK85]. **Efficiency** [HZH+18, HLL+18, KK16]. **Efficient** [BS97, DH04a, EG08, HS08, HYS21, NT96, RS06, SKT93, Ami00, App85, Bar86, BHR04, CL91, CCZ97, CWD08, EG09b, GR88b, KM00, KKB+21, Kro01, KS98a, LDB96, Of08, PN95, RS20, TSIM16, WL96, WHG94, YF98, ZGD+16]. **eigendecomposition** [CG04]. **eigensolver** [ZGD+16]. **Eighth** [HTA+97]. **elastic** [CCZ97, TC09]. **elasticity** [GKM96]. **elastodynamic** [CB14]. **elastoplastic** [WY07b]. **Elastostatic** [WZC+17, GG16, GH98, HLL08, Liu08, MB05, iYNK02, ZY05]. **elastostatics** [OSW05, PN95]. **Electric** [Gus98, PNB94, ZZ93, ABD04, CS82, HF92, WFC08]. **Electrically** [HAS02, GDDC08]. **Electrode** [HB93]. **Electrode-Electrolyte** [HB93]. **Electrolyte** [HB93, WZC21b]. **electrolyte-dielectric** [WZC21b]. **Electromagnetic** [CSMCxx, EMRV92, GA96a, GA96b, SLC97, BGGC06, Car09, ESRS01, ES04, GH08, HYS21, LHYS24, MG07, MD98]. **electromagnetics** [Ano95b, Ano96, Ano97a, CJL+97, Erg11, Gib08, LZL04, OMC08].

Electromagnetism [CDGS03, CDGS05, BDMN03a, BDMN03b, Car06, Car07, DM07, Syl03]. **electron** [GIS98, NH97]. **electronic** [Goe99, Kon93, KS98a, SSF96]. **Electrostatic** [CFH89, NT96, Pel98, BAL91, BHGR04, BHGR05, CC13, CG97, DM90, EGHT97, FOCB96, GB11, GM94, LCM07, NT94, OKS09, PA14, SGD+04, SKT94, YAO18]. **Electrostatics** [SRPD06, BWS+95, FGM11, LCHM10, LCHM13, YBK+11]. **Element** [Bör23, BR93, LJ96b, LJ96a, MBA97, Sel22, WZC+17, WMOZ22, WSW+95, YRB16, BSL09, Beb06, BWS+95, BH03, BHR04, BHGR04, CWK08, DMC20, Gav11, GP08, GD09, GODZ10, Ham11, HHL+21, KMC09, KCF+05, LS05, LOSZ07a, LOSZ07b, LCQF18, LHL08, Liu08, Liu09, OSW05, OSW06b, Of08, OKS09, PN95, SGG+04, Sat10, SS07, TCD17, TCD20, VW02, VCM00, WY05, WY07b, WY07a, WLB22, WSWL95, XJM08, YSM05]. **Element-Boundary** [LJ96a, SGG+04]. **elements** [BR93, Bre04, FST05, GAD13, HHL+21, Pta21, Ros06]. **Elizabeth** [IEE97]. **elliptic** [A+97, Beb06, FST05, LC14]. **elliptical** [Ros06]. **Elongation** [KLM+09]. **embedded** [RS20, SHM98]. **EMC** [HU97]. **employing** [RKRRL21]. **energetic** [BPK85]. **energies** [DTG96, FGM11]. **Energy** [HZH+18, BSSF96a, BSSF96b, CC13, CPP93, FOCB96]. **energy-conserving** [CC13]. **Engineering** [MBS15, SM05]. **Ensemble** [LCP93]. **entire** [LCZ07]. **entirely** [Sar03]. **Equation** [BSSJ23, CD13, GHRW98, GD03, MG11, Nil04, SC95, Sta95a, WZC19, WMOZ22, AP03, ABD04, BH03, CHL06, CCG+06a, CCG+06b, CC10, CC12, CRW93, DDL13, Dar02, EG09a, GGM93, GKM96, GR97, GK04, GD06, GD09, GAD13, Kro99, LHL08, LC94, MCBB07, MMNB06, NN12, OLL04, ON08a, ON09a, QCG15, RS97, Rok98, Sta95b, Tak14, WLL+07, WFC08, WZC21a, WZC21b, iYNK02, ZC00, ZKL+07]. **Equations** [DY98, AHLP93, AD05, Atk97, BDMN03a, BDMN03b, Car06, Car07, CCZ97, DH04b, Fuj98, Gas97, GBMN06, GOS99, GD07b, Hav03, LZL04, LX22, LC14, LC93, NT09, ON08b, ON09a, ON09b, RŠŽ09, RO04, Rok85, Rok90, RS94, Tau04, TG08, VW02, WLL+07, WCZ+20, Yin09, ZX19, ZC00]. **Equispaced** [CCFG23, DR95]. **equivalent** [RKRRL21]. **equivalent/check** [RKRRL21]. **Erratum** [BEM94, FLZB97a, SL97a]. **Error** [BH89, CC04, CC05, GKD09, GSS98a, GSS00, KSC99, OC05, PSPS95, PSS95, SP97, Dac09, Dac10, OC03, Pel98, WK18, Dar00a]. **error-controlled** [Dac09, Dac10]. **Error-estimates** [PSS95]. **errors** [AP00]. **estimates** [CC04, CC05, PSPS95, PSS95, SP97]. **Euler** [RS94]. **Eulerian** [NMDK99]. **EuMC** [Ano95a]. **European** [Ano95a]. **Evaluate** [CDM98]. **Evaluated** [ZZ93]. **Evaluating** [McK96, AB95]. **Evaluation** [CS98a, Gre87, Gus98, Ros06, AR91, BL97, BN98, BCR01, BPT07, BG94, CG97, CBN02, EGHT97, ESM98, Gas97, GG16, Gre88, GR88a, GM94, GH98, GORV21, HS08, KSC99, KKB+21, MKF01, MMC99, OR89, PRT92, PJY95, Rei99, RKRRL21, SF18, VOD08]. **Evaluations** [CS98b]. **event** [BSL11]. **event-driven** [BSL11]. **evolution** [SWJ+05]. **Ewald** [Ami00, BAL91, CL91, DYP93, DNS90, FMI+93, KM00, LS93, PG96b, SL97b, SKPP95]. **examples** [CX21]. **exascale** [YB12]. **Excitation** [GIS98]. **execution** [BDS07, LY14, YF98]. **exhibition** [Ano95a]. **Existence** [YSM05]. **Expansion** [FDvW21, Le 97, OC05, Pan95, SPS96, AHLP93, OC03, WL96, WXQL08, WCZ+20, WK18]. **Expansions** [Boy92b, CJ05, McD97, RGKM12, AR91, GB11, Lem98, MD98, SH07]. **explicit**

[JP89, Pud16]. **exponential** [TWYC06]. **Expressions** [Pan95, CS82]. **extended** [KS11]. **Extending** [CDJ07, DC07]. **Extension** [AYO20, GY08, TYON12]. **eXtensions** [TYON12]. **exterior** [AP03]. **Extraction** [YB01, JC04, NW89]. **extreme** [INS+20, WSH+12]. **extreme-scale** [INS+20, WSH+12].

facility [RTZ+96]. **FAMUSAMM** [EGHT97]. **Far** [LSCM96, HW11, KKB+21]. **Far-Field** [LSCM96, HW11]. **Fast** [And92, BT95, BSSJ23, BL97, BN98, BCR01, BPT07, BK15, BPT+14, BF78, BCP08, BKM09, BVW96, BV96b, BS00, BL98, BL05, BFO99, Boy92a, BHR04, BHGR04, BHGR05, CDM98, CDGS03, CDGS05, CL12, CC15, CSMCxx, CCZ97, CS98a, CS98b, CWA14, CBN02, CJL+97, CC10, CC12, CCFG23, CPD17, CKB11, Dac06, Dar97, DY98, Dem95, Dem96a, Dem96b, DD95, DR95, DGR96, EB94, EB96, EMRV92, ESM98, EG13, FOCB96, Gas97, Gav11, GSC01, GP93, Gre94, GHRW98, GW98, GORV21, Gue97, GA24, GD06, GD07a, GD08, GAD13, GA96a, GA96b, GS98b, HOST95, HAS02, HC10, HA17, HEGH14, JMC97, JMBC98, JBMC98, KLZ+06, KMC09, KK95, KCF+05, LCD14, LHL08, Liu09, LX17, LC93, LSCM96, LJ96b, LJ96a, LO96a, LRW95, MI95, MI96, MBS+00, Mak04, MG11]. **Fast** [MB16, MB05, MGM95, McK96, MPPA96, MMNB06, NW89, NT96, Nil04, NPR93, Of07, OKS09, PSN04, PD15, Pri94, QCG15, RRR05, RW94, RS94, SWW94, Sch94, Sel22, SG97, SHMC97, SMC97, SHHG93, SHT+95, SC94, SC95, SLC96, SLC97, Sta95a, SP01, STZ14, TXL19, WC94a, WC94b, WLMP99, WYW05, WY07b, WXQL08, WZC+17, WZC19, WZC21a, WZC21b, WMOZ22, WSW+95, XWY+08, XJM08, YR99, Yin09, Yin15, YNS+09, YAO20, YRB16, YB01, ZY05, AHLP93, AR91, AGR88a, AGR88b, AP99, AP00, AP03, Ami00, ATMK03, AYO20, AiIS+21, ATR+12, AC17, BDMN03a, BDMN03b, BSL09, BG97, BS19, BWS+95, BV96a, BSS97, BCL+92, BP03, BSSF96a, BSSF96b, BK96, CDJ07, CX21, CC04, CC05, Car09, CGR88, CWHG97, CDF10, CWK08, CCKL09, CGR99, CHL06, CCG+06b, CRG01, CPP93, CWD08, CRW93]. **fast** [CB20, CFR08, CB09, Dac09, Dac10, DMC20, Dar02, DM07, DM12, Dar00a, Dar00b, DH04a, DH04b, DC07, DRS96, ESRS01, ES04, Eng11, EG08, EG09a, EG09b, Erg11, EG01, FGM11, FLZB97a, FLZB97b, FPG05, FD09, Fuj98, GDDC08, GBMN06, GF06b, GF06a, GIS98, GY08, GR02, GG16, GROZ04, GKD09, GE13, GR87, GR88b, GG89, GG90, GS91, GH02, GCH+18, GD05, GD09, GODZ10, Ham11, HHKP09, HS08, Hav03, HLL08, HYS21, HW10, HW11, HU97, HR98, HGD11, HHL+21, HLN24, HJZ09, HLL+18, IYK16, KKLZ23, Kan15, KM00, KSS10, KS11, KKB+21, Kon93, KLM+09, KS98a, KS98b, KS04, KP05a, KP05b, KP08, KAN95, KAN96, Lab98, LOSZ07b, LCL+12, ŁBGS16, LB91, LB92a, LB92b, LJ98, LZL04, LCQF18, LGQZ21, LGG+13, LX22, LX23, LC14, Liu08, LHYS24, LY14]. **fast** [LCZ07, LCM07, LCHM10, LCHM13, LWM+02, Mak99, MG07, MG09, MR07, MRH14, MSS20, NT09, NN12, NH97, OR89, OSW05, OSW06a, Of08, OCK+03, OYK+14, OMC08, OLLL03, OLL04, OFH+08, OP07, ON09a, PJY96, PSPS94, PSPS95, PSS95, PA14, Pta21, Rah96, RRR03, RS20, RŠŽ09, RKRRL21, RKRRL22, RSBS19, RTZ+96, RO04, RTA+08, RS97, RS06, RCWY07, SGG+04, Sar03, Sat10, SL97a, SL97b, ST06, SWW99, SM97, SHM98, SH07, SKT94, Sin95, SKPP95, SP97, Sta95b, SB96, ST02, SK04, Sud04, Syl03, Tak14, TSIM16, TCD17, TCD20, Tau03b, Tau04, TCW08, TC09, TG08, TD09, VOD08, WK18, WJYO06, WL96, WY05, WY07a, WLL+07, WFC08, WCZ+20, WLB22, WHG94, WJGHG96a, WHG96a, WJGHG96b, WHG96b, WVK21, WSWL95, XWT09, YB21, YRGS13, hYtWbWL08, YR98, YCM25, YB97]. **fast** [YBZL03, YBZ04, Yin06, YBK+11, YBNY12, YB12, YBNY13, iYNK02, YAO18, YSM05, ZCG00, ZT07, ZHPS10, ZHPS11, ZB14, ZX19, ZCL+98, ZKL+07, ZGD+16, ZB95, AAB+17, Boy92b, CD13, CB14, CKE08, CFR10, DDL13, EMT99, FL13, GR97, GS98a, Lea92, LCP93, RGKM12, SL91, SLCL98a, SLCL98b, YTK14]. **Fast-multipole** [Dar97, EG01, Tak14, WLB22, ZCL+98]. **Fast-Multipole-Accelerated** [BSSJ23]. **FCCM** [PA02]. **FE** [SGD+04]. **February** [B+95]. **FEM** [MB05]. **ferrofluids** [HHM19]. **FFT** [TPKP12]. **FFTM** [HLL08, LHL08, OLL04]. **fiber** [WY07a]. **fiber-reinforced** [WY07a]. **Field** [LSCM96, PA02, ABD04, BHGR04, BHGR05, HW11, KKLZ23, KKB+21, MD98, OKS09, WFC08, Xue98]. **Field-Programmable** [PA02]. **Fields** [CK95b, Gre87, SHMC97, SMC97, SB98, YR99, CK95a, CG97, DC07, ESM98, GG16, Gre88, GR88a, GM94, GH98, HR98, OLLL03, Pel98, RKRRL21, ST06, SM97, VOD08]. **Fifth** [Ano92, IEE96b, MC92, IEE98]. **filtering** [BP03, YR98]. **fine** [Bar86]. **fine-grain** [Bar86]. **Finite** [FST05, LJ96b, LJ96a, Beb06, Ich02, LS05, LCZ07, SGG+04, Sat10, VW02]. **Finite-Element** [LJ96b]. **finite-sized** [Sat10]. **First** [OKF14, AHLP93]. **First-Principles** [OKF14]. **FISC** [SLCL98a, SLCL98b]. **Fitted** [ÁC94]. **fitting** [BS19, CK20, ŁBGS16, MSS20, TWYC06]. **Flexibly** [YS18]. **floating** [LKM02]. **floating-point** [LKM02]. **Flow** [Pri94, ECL02, Gre90a, GKM96, GK04, NMDK99, Tau03a]. **Flows** [GCG+99, WSW+95, BCH93, Kro99, Kro01, Kro02]. **Fluid** [SWW94, TDBEE11, Bat03, OMH+94, VGZB09, WSWL95]. **fluids** [Ang17, BPK85, LRJ+99, ZB14]. **FLY** [BAD01, BCAD06]. **FM** [BN07]. **FM-BEM** [BN07]. **FMA** [LO96b]. **FMBEM** [CWK08]. **FMD** [LWM+02]. **FMM** [Sel22, CCG+06a, EMRV92, HNO06, HJZ09, HZH+18, MRH14, ON08a, ON08b, ON09b, PG96b, SGD+04, SB98, YS18, ZHPS10]. **FMM/BEM** [Sel22]. **Fock** [KAN96, WJGHG96a, CK20, KAN95]. **Fokker** [Lem98, Lem04]. **Force** [Deh02, BH86, EIM+92, JP89, KK16, Xue98, YRGS13]. **force-calculation** [BH86]. **Forces** [BP88, CDM98, NT96, Pie93, WZC+17, BH03, CKS91, DM90, LDB96]. **Forest** [MPZ21]. **Form** [CJ05, AP99, BCP08, SH07]. **Formation** [FM96, FM95, SWJ+05]. **forms** [KSC99, Rah96, Rok98]. **Formula** [CL12]. **formulae** [NN12]. **Formulation** [AAL+01, JBL02, CB14, CWK08, CCKL09, CFR08, CFR10, DM07, GD07b, Liu08, OSW06a, Sel22, DM12]. **Formulations** [Ano94b, GKS94, MG11, EG09a, GKS98]. **Fortran** [GDK89]. **Foundations** [IEE92a]. **four** [BCR01]. **four-dimensional** [BCR01]. **Fourier** [Boy92b, EMT99, Boy92a, CD13, DR95, EB94, EB96, HLL08, HW10, LHL08, OLLL03, OLL04, Sar03, ZHPS11]. **Fourier-Based** [CD13]. **Fourier-series-based** [ZHPS11]. **FPGAs** [LKM02]. **Fractal** [PD15]. **Fractional** [WHG96a]. **fracture** [XWY+08, ZBG15]. **fracturing** [RSBS19]. **framework** [TPKP12]. **Francisco** [B+95]. **Fredholm** [AHLP93, LX22]. **free** [BSL11, BKM09, Car06]. **Frequencies** [GHRW98, DH04b, ZC00]. **Frequency** [Nil04, BK96, DH04a, KMC09, QCG15, TSIM16, ZC00]. **frontiers** [And08]. **Fully** [VTG91, RSBS19]. **function** [BLA05, BKM09, GDDC08, GD07a, GODZ10, LX17]. **Functional** [DRS96, BS19, KAN95, KAN96, ŁBGS16, MSS20, WJGHG96a, WJGHG96b]. **Functions**

[Boy92b, BL97, BN98, BCR01, Buh03, CBN02, KMC09, LCZ07, Tau03b, Yin06]. **Future** [EMT99].

GADGET [Spr05]. **GADGET-2** [Spr05]. **galactic** [MFK00]. **galaxies** [SWJ+05]. **Galaxy** [FM96, FM95]. **Galerkin** [AHLP93, AP03, DMC20, HKS05, OSW05, XWT09]. **Gap** [AAB+17]. **Gauss** [GS98a, GS91]. **Gaussian** [BSSF96a, BSSF96b, KS98a, Le 97, Ros06, Sal96]. **Gegenbauer** [CC05]. **General** [LCD14, McD97, BSL11, FG96, LX22]. **Generalization** [Boy92b]. **Generalized** [ADO11, CBN02, GR02, KAN95, KAN96, ST06, SK04, WJGHG96a, YR98]. **generating** [CB20]. **Generation** [HL15, Sal96]. **geometric** [CDF10]. **Geometries** [MGM95, AC17, KS98b, NW89]. **Geometry** [SC94, TW03]. **Gflops** [MHI07, WGL+98]. **giant** [RTZ+96]. **gigaflops** [WSB+97]. **GMRES** [BGGC06, WLB22, YRB16]. **Good** [Ten98]. **GOTPM** [DKPH04]. **GPU** [GE13, Ham11, HL15, HEGH14, KKLZ23, Kan15, MPZ21, WN14, WVK21]. **GPU-accelerated** [Ham11, WVK21]. **GPU-parallelized** [KKLZ23]. **GPUs** [HNY+09, HN10, YNS+09, YBK+11, YBNY12, YBNY13]. **gradients** [BSSF96a, ŁBGS16]. **grain** [Bar86]. **grained** [PA14]. **graining** [GB11]. **granularities** [BME93, BEM94]. **GRAPE** [Ano94a, CKE08, EIM+92, EFT+93, FM95, FM96, KFM99, KFMT00, MIES90, MTES94, MT95, MT98, MFK00, MKF01, MKFD02, MFKN03, Mak04, MHI07, MD12, OME+92, TMES94, TYNO12, YF05]. **GRAPE-2A** [EIM+92]. **GRAPE-3** [OME+92]. **GRAPE-4** [Ano94a, FM95, FM96, MTES94, MT95, TMES94]. **GRAPE-5** [KFM99, KFMT00]. **GRAPE-6** [MFK00, MKF01, MKFD02, MFKN03]. **GRAPE-8** [MD12]. **GRAPE-DR** [MHI07]. **graphics** [GD08]. **gratings** [Sat10]. **gravitating** [TYON12]. **Gravitational** [CDM98, SWW94, Wam99, DHM03, MD12, OME+92, SCM+90]. **Gravity** [BOX00, Xu95]. **GreeM** [IFM09]. **Green** [BKM09, Tau03b]. **Greengard** [Alu94, Alu96, HM95, SB98]. **Green's** [CB14]. **Grid** [Ber95, Bor86, Boy92a, HTG02, Bes00, Car06, DM90, RS20, ZGI+10]. **grid-calculated** [DM90]. **gridded** [HW11]. **Gridless** [AGR88b, AGR88a]. **grids** [GOS99, HW10]. **ground** [TCW08]. **Group** [Wel91]. **groups** [AB95, Kan15]. **Guest** [DS00, GW98]. **guided** [Sat10]. **guided-mode** [Sat10]. **Guidelines** [BV96b, BV96a]. **guns** [NH97]. **GvFMM** [BSSF96a, BSSF96b].

H2Pack [HXC21]. **half** [BSL09, CB14, GSC01, GG16]. **half-space** [BSL09, CB14, GG16]. **Halos** [ZQSW94]. **Hamiltonian** [CDF10]. **Hanover** [Mak93]. **Hardware** [HZH+18, ATMK03]. **Harmonic** [CAJ09, GD07b, GODZ10]. **harmonics** [PJY96, ST02, WL96, YR98]. **HARP** [KMT94]. **HARP-1** [KMT94]. **Hartree** [KAN96, WJGHG96a, CK20, KAN95]. **Hashed** [WS93]. **Haskell** [TL14]. **head** [GODZ10, KMC09]. **head-related** [GODZ10, KMC09]. **Heat** [WMOZ22]. **heavy** [RTZ+96]. **heavy-ion** [RTZ+96]. **Held** [HTA+97, HM86, AG88, Ano97b, K+96, Rod89]. **Helmholtz** [AP03, BKM09, CD13, CC15, CHL06, CCG+06a, CCG+06b, CC10, CC12, DDL13, Dar02, GHRW98, GD03, GD09, GAD13, GS98b, NN12, Nil04, OLL04, ON08a, QCG15, RS97, Rok98, Sta95b, Sta95a, TCD17, VW02, WZC19, WCZ+20]. **Hermite** [KMT94, NMH06]. **Heterogeneous** [ADB94, HGD11, INS+20, LCL+12]. **Hierarchical**

[Alu94, AGPS98, BH86, BJWS96, BH88, Deh02, Dem95, Dem96a, Dem96b, HS95, HJ96, SHG95, SHT+95, EG09b, HNY+09, HSA91, JP89, MG05, PG94, Sin92, VCM00, Wam99, WS92, Xue98, YGSR01]. **hierarchical-element** [VCM00]. **High** [ACM97, BGI+99, BK96, CFR08, CFR10, FHM99, GBMN06, HL15, Hol12, HZH+18, HXC21, IEE94b, IEE96b, IEE98, LCK11, Nil04, TWYC06, WWF02, DC07, GH08, GY08, IYK16]. **High-Density** [WWF02]. **High-frequency** [BK96]. **High-order** [TWYC06, DC07, GH08]. **High-Performance** [FHM99, IEE94b, HXC21, IYK16]. **Higher** [PNB94, RRR05, HHL+21, Pta21]. **higher-order** [Pta21]. **Highly** [BS97, KKB+21, OME+92, YBNY13, ZX19]. **Hilton** [IEE90]. **HODLR** [GA24]. **holes** [MFK00]. **homogeneous** [CL91, YRGS13]. **homogenisation** [HNO06]. **host** [SHM98]. **Hotel** [IEE97]. **Hub** [HL15]. **Hut** [AAL+01, Ano94b, BJWS96, BGLM05, GKS94, GKS98, INS+20, MPZ21, SHT+95, WSH+12, ZBS11, ZBS15]. **Hybrid** [BSSJ23, HEGH14, JMC97, WN14, DKPH04, LZL04, LC93, OFH+08, SGG+04]. **hydraulic** [RSBS19]. **hydrodynamics** [GCH+18]. **Hyglac** [WSB+97]. **hyper** [DHM03]. **hyper-systolic** [DHM03]. **Hypercube** [BME93, BEM94, BME90, DK93]. **hypercubes** [SS89].

I/O [Mak93]. **ICCAM** [BGPW00]. **ICCAM-98** [BGPW00]. **ICS** [KK88]. **IEEE** [IEE96b, IEE02, PA02, ACM97, Kar95]. **Igniting** [ACM03]. **II** [CC05, PGB05, WSB+97]. **Illinois** [SLCL98a, SLCL98b]. **image** [DC07]. **imaging** [Ano97b]. **impact** [GIS98]. **Implementation** [And92, HJ96, INS+20, Liu94, MPPA96, NPR93, OP07, YB01, AHLP93, Bes00, BJWS96, Bha97, CCG+06a, Dar00b, GR88b, Hav03, KP05b, KP08, LO96b, Mak93, OCK+03, RS06, Sin95, WHG94]. **Implementations** [BS97, WLMP99, BHE+94, Buh03, TL14]. **Implementing** [KN95, SL91, MRH14, SL97a]. **Implications** [Sin92, SHG95, DRS96]. **implicit** [CC13]. **imposing** [YS18]. **Improve** [HLL+18]. **Improved** [MPPA96, YR99, HR98, PRT92, PA14]. **Improvement** [Ich02]. **Improving** [CDCD97, GSS98a, GSS00, MPZ21, KK16]. **incident** [CCKL09]. **inclusion** [HNO06]. **Incomplete** [MG07]. **Independent** [Alu94, APG94, AGPS98, Ano94c, SB98, LX23, MR07, RKRRL22, YS18, YBZL03, YBZ04, Yin06, ZHPS11]. **India** [IEE98]. **indirect** [GAD13, Ham11, LHL08]. **Induction** [Pie93]. **industrial** [And08, GLS06, Syl03]. **Inexact** [LOSZ07a, LOSZ07b, WLB22]. **inextensible** [VGZB09]. **infinite** [KS04, Mil08]. **Inhomogeneous** [SHMC97, SMC97, CL91, SM97, SHM98]. **Innovation** [ACM03]. **Insight** [IEE02]. **Institute** [BR93, HM86]. **instruction** [TYON12, TYNO12]. **Integral** [BSSJ23, CL12, GKM96, GK04, Kro99, LJ96b, LJ96a, MG11, SC95, ZC00, AP03, ABD04, AD05, Atk97, BDMN03a, BDMN03b, Bes00, Car06, Car07, CCZ97, CCKL09, DM07, EG09a, Fuj98, Gas97, GBMN06, GOS99, LZL04, LX22, LC93, LC94, NT09, OSW06a, ON09a, RŠŽ09, RO04, Rok85, Rok90, Ros06, Tak14, TW03, Tau04, VGZB09, WLL+07, WFC08, Yin09, iYNK02, ZX19, ZGD+16]. **Integral-Equation** [MG11, EG09a]. **Integrals** [BL05, Gus98, ZZ93, BL98]. **Integration** [DGR96, Oku96, WZC+17, HLN24, NMH06]. **integrations** [CDF10]. **Integrator** [Per99, SP99, KM00, KMT94]. **integrators**

[FLZB97a, FLZB97b, Sha06]. **Intel** [FQG+92]. **Interacting** [BP88, BP93]. **interaction** [GF06b, GF06a, HLL+18, Kan15, YAO18, ZD05]. **Interactions** [BFO99, DD95, GGM01, LS93, ATMK03, AO10, BAL91, BPK85, CFH89, CKB11, DKG92a, DKG92b, DKG92c, EGHT97, Ess95, GH02, HJZ09, NT94, PJY95, SKT93, SKT94, ZHPS10]. **interatomic** [CKS91]. **InterCom** [BSvdG+94]. **interconnecting** [LS05, LOSZ07a, LOSZ07b, OSW06b]. **Intercontinental** [ZGI+10]. **Interfaces** [HB93, Kro02]. **interfacial** [Kro01]. **interior** [Mil08]. **Intermolecular** [Pie93]. **International** [BR93, BGPW00, ERT12, Hol12, IEE94a, IEE95, IEE96a, IEE96b, IEE97, IEE98, KK88, LCK11, MBA97]. **Interpolation** [Boy92a, CCFG23, DGR96, KLZ+06, BLA05, GD07a, KKLZ23, LX23, Sar03, Tak14, WVK21]. **Interpolation-Based** [CCFG23, KKLZ23, Tak14]. **Interprocessor** [BSvdG+94]. **Introduction** [DS00, GW98]. **Inverse** [CDGS03, CDGS05, CPD17, GA24, Beb06, BN07, FPG05, HC10, LZL04, MG09, TCD17, TCD20]. **Inverting** [GGM01]. **Investigations** [hYtWbWL08]. **inviscid** [Kro02]. **Invited** [HOST95]. **involving** [AB95, EG09a, Erg11, Lin95]. **ion** [RTZ+96]. **ionic** [BPK85, CL91, DC07]. **irGPU.proton.Net** [Kan15]. **Irregular** [Boy92a, Kan15, YF98]. **isotropic** [GKM96, GH98]. **issue** [MC92]. **issues** [Mak93]. **Italy** [Ano95a, MBA97]. **Iteration** [YRB16, GD07a]. **iterations** [WLB22]. **Iterative** [GSS98b, AD05, FG96, GDDC08, HC10, Mil08].

J [BEM94, Dac10]. **Jacobi** [CC04]. **Jose** [ACM97]. **Jr** [ACM99]. **July** [IEE96a, IEE96c, IEE97, RSS96]. **June** [HM86, IEE94a, IEE95, Mak93].

Karhunen [ST06]. **Kernel** [CWA14, HXC21, YB21, CC15, LX22, LX23, MR07, RKRRL22, WCLD21, YS18, YBZL03, YBZ04, Yin06, ZHPS11]. **kernel-independent** [LX23, MR07, YBZL03, YBZ04, ZHPS11]. **Kernels** [CCFG23, LCD14, GR02, PSN04, ZX19]. **kind** [AHLP93, LX22, Tau04]. **kinematics** [RŠŽ09]. **King** [ACM99]. **KNN** [MPZ21]. **knots** [PSN04]. **Knoxville** [IEE94b]. **Kohn** [BSSF96b]. **Krylov** [Car07, GD07a, JH08]. **KWIK** [DTG96].

Lagrange [WVK21]. **Lagrangian** [NMDK99]. **Lake** [Hol12]. **Landau** [Lem98, Lem04]. **language** [MRH14]. **Laplace** [GGM93, GR97, LHL08, WZC21a]. **Laplacian** [GGM01]. **Large** [BADG00, BVW96, BV96b, CDGS03, CDGS05, FLZB97a, FLZB97b, GF06b, GF06a, HOST95, IFM09, OKF14, SRPD06, SLC97, WLMP99, WY07a, ZQSW94, ATR+12, BAAD+97, BWS+95, BV96a, Car09, DYP93, EG08, Erg11, EG13, GDDC08, GLS06, GDK89, HHM19, JdR+18, KP08, LCQF18, LGQZ21, LBI+97, LCZ07, LWM+02, PN95, PG96b, TC09, WYW05, WY05, XWY+08]. **Large-Scale** [BADG00, OKF14, SRPD06, GF06b, GF06a, ATR+12, EG08, Erg11, EG13, HHM19, LCQF18, LGQZ21, LCZ07, PN95, XWY+08]. **Lattice** [LS93, BG94, KS04, RO04]. **Laugh** [Bar90]. **Layer** [McK96, GKD09, GORV21]. **Layered** [GA96a, GA96b, WZC19, GROZ04, WCZ+20, WZC21a, WZC21b]. **layers** [GROZ04]. **Learning** [RGKM12, HHKP09]. **Leave** [Wil00]. **Legendre** [AR91, Sud04]. **lensing** [Wam99]. **Less** [WN14]. **LET** [HL15]. **Letters** [MBS+00]. **Level** [BK15, CJ05, AP03, DKG92a, HLN24, LCQF18]. **library** [BSvdG+94, CKB11, TYNO12]. **limited** [BDS07]. **Line** [YR99]. **Linear** [CPD17, Goe99, Pie93, Pud16, WJGHG96b, BH03, BGGC06, KLM+09, OSW05, SSF96].

lines [JH08]. **link** [GDK89]. **Linux** [WGL+98]. **Liquid** [MPPA96]. **Liquids** [AT87, CKS91]. **lithography** [YB97]. **Load** [SHT+95, Ten98, BAAD+97, FG96, MG05, PGdS+15]. **Loading** [HL15]. **Local** [RGKM12, CFR08, MCBB07, RKRRL21, YS18]. **Locality** [SHT+95]. **locally** [GH98, GORV21]. **locally-corrected** [GORV21]. **Loève** [ST06]. **logarithmic** [JP89]. **Logical** [Bor86]. **Loki** [WSB+97]. **London** [DKG92a]. **Long** [Pie93, AO10, BAL91, BPK85, Ess95]. **Long-Range** [Pie93, Ess95]. **lossy** [GSC01]. **Low** [GHRW98, DH04a, QCG15, TSIM16, TPKP12]. **low-communication** [TPKP12]. **low-frequency** [DH04a, TSIM16]. **LSS** [BCAD06]. **Luther** [ACM99].

M [PG96b]. **M2L** [KKB+21, TSIM16]. **machine** [HHKP09, BME90, WS91, ZJ91]. **Machines** [PA02, BCOY93, KP05b, LBC91, Mak93]. **Macromolecular** [LCE+06, Ske89]. **macromolecules** [BH03, FLZB97a, FLZB97b]. **macroscopic** [LDB96]. **Madras** [IEE98]. **Magnetic** [Gus98]. **magneto** [VOD08]. **magneto-static** [VOD08]. **magnetorheological** [LRJ+99]. **magnetostatic** [BHGR05]. **malignant** [ES04]. **Many** [HP95, PG96a, Pie93, App85, EIM+92, EFT+93, HFKM98, HYS21, INS+20, LHYS24, OME+92, SCM+90]. **Many-Body** [HP95, Pie93, PG96a, App85, EIM+92, EFT+93, HFKM98, OME+92, SCM+90]. **many-core** [HYS21, INS+20, LHYS24]. **map** [GGM93]. **MAPLE** [McD97, Pie93]. **Mapping** [BT03, LB92a]. **mappings** [OR89]. **March** [Ano95b, Ano96, Ano97a, Ful97, HTA+97]. **Martin** [ACM99]. **Maryland** [IEE96a]. **Massachusetts** [K+96]. **Massive** [LHYS24]. **Massively** [BP88, IFM09, JBL02, KP05b, LO96a, LCP93, MFKN03, LCL+12, LBI+97, MHI07, SRK+12, TMES94, WSH+12]. **Massively-Parallel** [MFKN03, MHI07]. **matched** [GROZ04, GKD09]. **materials** [GM94, NKV94, Pta21, K+96]. **Matérn** [CWA14]. **Mathematical** [BCM02, CHJN03, Dar97]. **Mathematics** [BGPW00, HDG+15, Ano90, RSS96, dCGQS06]. **Matrices** [Bör23, HXC21, Pan92, CG04, Dac06, XTH09]. **Matrix** [HXC21, PNB94, SP01, CX21, Car06, FG96, WCLD21, XWT09]. **matrix-free** [Car06]. **matrix-vector** [XWT09]. **Matter** [ZQSW94, FRE+08]. **Maxwell** [DH04b, DY98, GBMN06, GD07b, Hav03, ON08b, ON09a, ON09b, ZC00]. **May** [AG88, IEE94b]. **MD** [IEE02, DK93]. **means** [MG05]. **mechanic** [SWW99]. **mechanical** [SGD+04, WY05, WY07a]. **mechanical-electrostatic** [SGD+04]. **mechanics** [BCM02, Bat03, hYtWbWL08]. **Media** [GA96a, GA96b, WZC19, GROZ04, WCZ+20, WZC21a, WZC21b]. **medium** [ZCL+98]. **MEG** [KCF+05]. **MEG/EEG** [KCF+05]. **Memory** [MB16, YB01, BCOY93, DK93, KP05b, LBC91, LMCPP92, MMC99, RC97, Ske89]. **MEMS** [SGD+04]. **Mesh** [BOX00, DYP93, DKPH04, KM00]. **meshes** [HKS05, ZBG15]. **meshless** [BLA05, YNS+09]. **Message** [KP08]. **Message-passing** [KP08]. **metamaterials** [OMC08]. **Meter** [WWF02]. **Method** [Alu94, AAL+01, And92, Ano94b, BSSJ23, BT03, BK15, BPT+14, BVW96, BV96b, BL05, BH88, CL12, CC15, CS98b, CCFG23, CPD17, CKB11, EMRV92, FDvW21, GP93, GKS94, Gue97, GA24, GA96a, GA96b, GS98b, HOST95, HAS02, HXC21, KLZ+06, LCD14, LSCM96, LJ96b, LJ96a, MI96, MB16, McK96, NT96, Nil04, PD15, RRR05, RW94, Sch94, Sel22, SG97, SMC97, SHHG93, SC94, SC95, Sta95a, SP01, WC94a, WZC+17, WZC19, WMOZ22, Yin15, YRB16, ZJ91,

AGR88a, AGR88b, AP00, AP03, Ami00, ATMK03, AYO20, AiIS+21, BDMN03a, BDMN03b, BSL09, BS19, BG94, BWS+95, BV96a, BL98, BH03, BHR04, BHGR04, BHGR05, BSSF96a, BSSF96b, BK96, CDJ07, CX21, CL91, CC04, CC05, Car09, CWHG97, CDF10, CCZ97, CWK08, CCKL09, CCG+06b, CRG01, CPP93, CRW93].
method
[CB20, CFR08, CB09, Dac06, Dac09, Dac10, DMC20, DYP93, Dar02, DM07, DM12, Dar97, Dar00a, Dar00b, DH04a, DH04b, DC07, DRS96, DKG92a, DKG92c, ESRS01, ECL02, FGM11, FOCB96, FLZB97a, FLZB97b, FD09, Fuj98, FMI+93, GDDC08, GSC01, Gib08, GR02, GG16, GROZ04, GKS98, GG89, GG90, GH02, GP08, GCH+18, GD05, GD06, GD09, GODZ10, Ham11, HM95, Hav03, HC10, HW10, HW11, HU97, HHL+21, HJZ09, HLL+18, Ich02, JH08, JC04, KKLZ23, Kan15, KM00, KSS10, KS11, KKB+21, KLM+09, KMC09, Kro01, KS98b, KS04, KP05b, KN95, KCF+05, Lab98, LCL+12, ŁBGS16, LJ98, LCQF18, LGG+13, LX22, LX23, LHL08, LC14, Liu08, Liu09, LCZ07, LCM07, MI95, Mak99, MB05, MR07, Mil08, MRH14, MMNB06, MSS20, NT94, NH97, OSW05, OSW06a, Of08, OKS09].
method [OCK+03, OYK+14, OMC08, OFH+08, OP07, ON09a, PN95, PSPS94, PSPS95, PSS95, PG96b, PA14, QCG15, RRR03, RKRRL21, RSBS19, RO04, RTA+08, RS97, RS06, SGG+04, SF18, Sat10, SL97a, SL97b, SM97, SH07, Sin95, SKPP95, SP97, Sta95b, SK04, Sud04, Syl03, Tak14, TSIM16, TCD17, TCD20, Tau03b, Tau04, TXL19, TG08, VW02, VOD08, VGZB09, VCM00, WY05, WY07a, WFC08, WCZ+20, WZC21a, WZC21b, WLB22, WHG94, WHG96a, WJGHG96b, WHG96b, WVK21, WSWL95, XJM08, YB21, YR98, YCM25, YB97, YBZL03, YB12, YBNY13, iYNK02, YAO18, YAO20, YSM05, ZT07, ZHPS10, ZHPS11, ZB14, ZKL+07, ZGD+16, ZB95, AAB+17, CD13, CKE08, CC10, CC12, CFR10, DDL13, FL13, GR97, LCP93, RGKM12, SL91, YTK14, Gav11].
Method-Efficient [NT96]. **Methods** [Aar85, Alu94, AG88, BS93, BS97, Bör23, BR93, DY98, Dem95, Dem96a, Dem96b, FQG+92, GHRW98, GW98, HEGH14, HJ96, LRW95, MBA97, SRPD06, SHG95, SHT+95, TDBEE11, VTG91, WSW+95, YF05, A+97, BLA05, BCH93, BL97, BG97, BN98, BCR01, Bes00, BDS07, Car07, CBN02, CJL+97, CWD08, CK00, Eng11, Gas97, GBMN06, GY08, GCG+99, Goe99, GE13, GKM96, GK04, GORV21, GD08, HS95, HGD11, IYK16, Kro99, Kro02, KP05a, KP08, LS05, LOSZ07a, LOSZ07b, LOG12, Lin95, LX17, LY14, MC92, NN12, OSW06b, Of07, Oku96, PJY96, PG96a, RS20, RKRRL22, RS94, ST06, SKT94, SM05, Sin92, SB96, TD09, YGSR01, aYZ97, YNS+09, YBNY12, ZX19, MC92]. **microlithography** [Ful97].
microlocal
[BDMN03a, BDMN03b, Dar02, GBMN06].
micromagnetic [VOD08].
microprocessors [NMH06, MSV92].
Microscopic [HB93]. **Microstrip** [MI96, MI95, ZCL+98]. **Microwave** [Ano95a, ZC00]. **militaires** [Ano97b].
military [Ano97b]. **Miller** [Sel22]. **million** [DKG92a, DKG92c]. **million-atom** [DKG92c]. **MIMD** [FQG+92, LB92a]. **mine** [ESRS01]. **Minimal** [BF78]. **Minimization** [OC05]. **minimize** [AiIS+21]. **Minneapolis** [HTA+97, IEE92b]. **Minnesota** [IEE92b].
MLFMA [SLC96]. **MN** [HTA+97]. **mode** [Sat10]. **model** [CAJ09, ES04, FG96, Ham11, IYK16, KP08, LGQZ21, TD09].
modeling
[BCM02, NMDK99, NKV94, ZKL+07].
Models [ÁC94, HB93, PN95, SGG+04].
Modern [MPZ21, NMH06, SF18].
Modification [SB98]. **Modified** [Bar90, BADG00, CHL06, LCQF18, LGQZ21].
module [DK93]. **Molecular**

[ÁC94, BGGT90, BAL91, BHGS90, BP88, CDCD97, Gus98, HGS90, LBC91, LBI+97, LMCPP92, MPPA96, OKF14, WLMP99, WS91, ATMK03, AiIS+21, BSL11, BS19, BWS+95, BSS97, BCL+92, BHE+94, BHER94, BCOY93, BCOY94, BP93, CvHMS94, DK93, EGHT97, GDK89, GKZ07, KM00, LM02, ŁBGS16, LWM+02, NKV94, OYK+14, OP07, PGB05, PA14, SF18, SWW99, Win95, ZB95]. **molecular-dynamics** [BCL+92, BP93]. **Molecule** [Pie93]. **molecules** [Kan15]. **Moment** [Gus98, McD97, ZZ93, BN98, CS82]. **moment-based** [BN98]. **Moments** [PNB94, Gib08, HHKP09, Kon93]. **momentum** [GY08, WHG96b]. **monostatic** [RCWY07]. **Monotonic** [Bor86]. **Monte** [ESRS01]. **Monterey** [Ano95b, Ano96, Ano97a]. **Montréal** [IEE97]. **motion** [DHM03, Kro01]. **Mountain** [MC92]. **mover** [CC13]. **MPI** [IEE96c, AiIS+21, BCAD06, LO96b, Per99, SP99]. **MPI-2** [BCAD06]. **MPSim** [LBI+97]. **MR** [BEM94]. **Multi** [AP03, Ang17, BAD01, HLN24, Liu08, RS20, WSH+12]. **multi-disciplinary** [WSH+12]. **multi-domain** [Liu08]. **multi-grid** [RS20]. **Multi-level** [AP03, HLN24]. **multi-platform** [BAD01]. **Multi-scale** [Ang17]. **Multibody** [BGI+99, JBL02, LOG12]. **Multicomputers** [YB01]. **Multicore** [HEGH14, ZBS15]. **Multidimensional** [CK95b, BCP08, BL98]. **multigrid** [Gas97, IHM05, MC92, Of08]. **Multilevel** [CSMCxx, GS98b, MG11, SLC96, SLC97, TCW08, TC09, A+97, ATR+12, BDMN03b, DM12, EG08, EG09a, EG09b, Erg11, EG13, GDDC08, GKD09, HS08, HYS21, HC10, LZL04, LGQZ21, LHYS24, LC94, MG07, MG09, RCWY07, Sar03, WJYO06, YRGS13]. **Multiple** [BS93, BSS97, FLZB97a, FLZB97b, KM00, Kro02]. **multiplication** [WCLD21, XWT09]. **multiply** [GGM93]. **multipoint** [PRT92]. **Multipolar** [LS93]. **Multipole** [AAB+17, And92, BSSJ23, BT03, BK15, BPT+14, Ber95, BVW96, BV96b, BS00, BL05, BFO99, Boy92b, CDM98, CDGS03, CDGS05, CL12, CD13, CC15, CSMCxx, CKE08, CS98b, CC10, CC12, CCFG23, CJ05, CFR10, CPD17, CKB11, DDL13, DY98, EB96, EMRV92, FDvW21, FL13, GP93, GSS98a, GSS00, GR97, GHRW98, GW98, Gue97, GA24, GD03, GA96a, GA96b, Gus98, GS98b, HOST95, HAS02, HA17, HEGH14, JMC97, JMBC98, Kon93, KLZ+06, KK95, Le 97, Lea92, Lem98, LCD14, Lin95, LSCM96, LJ96b, LJ96a, LO96a, LCP93, LRW95, MI96, MBS+00, MG11, MB16, McD97, McK96, MPPA96, NT96, Nil04, NPR93, OC05, Pan95, PNB94, PD15, RRR05, RGKM12, RW94, SRPD06, SPS96, SL91, SL97b, Sch94, Sel22, SG97, SHMC97, SMC97, SHHG93, SHT+95]. **Multipole** [SC94, SC95, SLC96, SLC97, Sta95a, SP01, WC94a, WC94b, WLMP99, WZC+17, WZC19, WMOZ22, YR99, Yin15, YTK14, YRB16, YB01, ZJ91, ZZ93, AHLP93, AGR88a, AGR88b, AP99, AP00, AP03, Ami00, ATMK03, AYO20, AiIS+21, ATR+12, AC17, BDMN03a, BDMN03b, BSL09, BG97, BS19, BWS+95, BV96a, BSS97, BCL+92, BHE+94, BHER94, BL98, BH03, BHGR04, BHGR05, BSSF96a, BSSF96b, BK96, CDJ07, CX21, CC04, CC05, Car09, CGR88, CSA95, CWHG97, CDF10, CCZ97, CWK08, CCKL09, CGR99, CCG+06b, CRG01, CPP93, CS82, CWD08, CRW93, CB20, CFR08, CB09, CK20, Dac06, Dac09, Dac10, DMC20, Dar02, DM07, DM12, Dar97, Dar00a, Dar00b, DH04a, DH04b, DC07, DRS96, DKG92a, DKG92c, ESRS01, ES04, EB94, Eng11, EG08, EG09a, EG09b, Erg11, EG13, EG01, FOCB96]. **multipole** [FLZB97a, FLZB97b, FPG05, FD09, Fuj98, GDDC08, Gas97, GBMN06, GF06b, GF06a, Gav11, GSC01, GIS98, GY08, GR02, GG16, GROZ04, GKD09, GE13, GB11, GR88b, GG89, GG90, GH02, GORV21, GCH+18, GD05, GD06, GD08, GD09, GODZ10, GAD13, Ham11, HHKP09, HS08, Hav03, HYS21, HC10, HW10, HW11, HF92, HU97, HR98, HGD11, HHL+21, HLN24, HJZ09, HLL+18, IYK16, KKLZ23, Kan15, KM00, KSS10, KS11, KKB+21, KLM+09, KMC09, KS98a, KS98b, KS04, KP05a, KP05b, KP08, KAN95, KN95, KAN96, KCF+05, Lab98, LM02, LDB96, LOSZ07b, LCL+12, ŁBGS16, LB91, LB92a, LB92b, LJ98, LZL04, LOG12, Lem04, LCQF18, LGQZ21, LGG+13, LX22, LX23, LC14, Liu08, Liu09, LX17, LHYS24, LY14, LCZ07, LCM07, LCHM10, LCHM13, LWM+02, MI95, Mak99, MG07, MG09, MD98]. **multipole** [MB05, MR07, MRH14, MMNB06, MSS20, NW89, NT09, NT94, NN12, NH97, OSW05, OSW06a, Of07, Of08, OKS09, OCK+03, OYK+14, OC03, OMC08, OFH+08, OP07, ON09a, PRT92, PN95, PJY96, PSPS94, PSPS95, PSS95, PA14, Pta21, QCG15, Rah96, RS20, RŠŽ09, RKRRL21, RKRRL22, RSBS19, RTZ+96, RO04, RTA+08, RS97, RS06, RCWY07, SGG+04, SF18, Sar03, Sat10, SL97a, ST06, SWW99, SM97, SHM98, SKT94, Sin95, SKPP95, SP97, Sta95b, SB96, SK04, Sud04, STZ14, Syl03, Tak14, TSIM16, TCD17, TCD20, Tau03b, Tau04, TXL19, TCW08, TC09, TG08, TD09, VOD08, WJYO06, WL96, WYW05, WY05, WY07b, WY07a, WLL+07, WXQL08, WCZ+20, WZC21a, WZC21b, WLB22, WHG94, WJGHG96a, WHG96a, WJGHG96b, WHG96b, WVK21, XWY+08, XJM08, YS18, YB21, YRGS13, hYtWbWL08, YR98, YCM25]. **multipole** [YB97, YBZL03, YBZ04, Yin06, YNS+09, YBK+11, YBNY12, YB12, YBNY13, iYNK02, YAO18, YAO20, YSM05, ZCG00, ZT07, ZHPS10, ZHPS11, ZX19, ZCL+98, ZY05, ZKL+07, ZGD+16, ZB95, ZD05, CB14]. **multipole-accelerated** [BHE+94, BHER94, ZD05]. **Multipole-Based** [GSS98a, GSS00, YB01, LDB96]. **multipole-to-local** [CFR08, YS18]. **Multipoles** [And92, ÁC94, GSS98b, HLL08, LHL08, Mak99, OLLL03, OLL04]. **Multiprocessor** [SHG95, LMCPP92, Sin92, Ske89]. **Multiprocessors** [BB87, HS95]. **multiquadrics** [CBN02]. **Multiresolution** [NKV94]. **Multiscale** [ERT12, TW03]. **Multithreaded** [ZBS15]. **Multivariable** [BL05]. **multiwavelet** [FBHJ04].

Name [Cip00]. **Napa** [PA02]. **natural** [AO10]. **Navier** [Sel22]. **Near** [Bor86, CAJ09, ON09a, Rei99]. **near-rigid** [CAJ09]. **Nearest** [CK95b]. **Neighbor** [Bor86]. **Neighbors** [CK95b]. **Neptune** [MKFD02]. **network** [LB91]. **Networking** [ACM97, Hol12, LCK11]. **networks** [Kan15, LJ98]. **Neumann** [GGM93]. **New-version-fast-multipole-method** [LCM07]. **Newport** [IEE95]. **News** [Kan15]. **NH** [Mak93]. **no** [BEM94]. **Node** [BK15, FRE+08]. **Node-Level** [BK15]. **Non** [BB87, BCP08, DR95]. **non-equispaced** [DR95]. **non-standard** [BCP08]. **Non-Uniform** [BB87]. **nonbond** [DKG92a]. **nonbonded** [ATMK03]. **nonequispaced** [PSN04]. **nonlinear** [CAJ09]. **nonlinearly** [CC13]. **nonoscillatory** [GR02]. **nonplanar** [YB97]. **nonsmooth** [Beb06]. **normal** [GG16]. **Nose** [BVW96]. **Notre** [IEE96c]. **November** [ACM96, ACM97, ACM99, ACM03, Hol12, IEE90, IEE92b, IEE93, IEE94c, IEE02, K+96, LCK11]. **nuclear** [PGB05]. **number** [GDK89, Ich02]. **numbers** [JdR+18, WYW05]. **numerica** [Ise97]. **Numerical** [CL91, GKZ07, Kro02, Pri94, TDBEE11, dCGQS06, Atk97, BCM02, BCH93, CDF10, CG97, CHJN03, Dar00b, GCG+99, Gre90b, GM94, GH98, HLN24, KSC99, Kro01, OR89, PRT92, RSS96, TYNO12, Wam99, ERT12].

O [Mak93]. **Object** [BT95, SHMC97, ESRS01, SM97, SHM98]. **Objects** [BVW96, BV96b, SLC96, SLC97, BV96a, EG09a, Erg11, TC09]. **Oblique** [SM97, CCKL09]. **obstacles** [Mak93]. **Oct** [WS93]. **Oct-Tree** [WS93]. **October** [Ano97b, HB93, IEE92a]. **Off** [HL15, DH86]. **Off-Loading** [HL15]. **One** [Ano94a, MTES94, WWF02, FRE+08, HM95, MR07, SK04, YR98]. **one-dimensional** [SK04, YR98]. **One-Tflops** [Ano94a, MTES94]. **onto** [Boy92a, LB92a]. **open** [CKB11]. **Opening** [And08]. **OpenMP** [AAB+17]. **operator** [CFR08, Lem98, Lem04, YS18]. **Operators** [CJ05, Beb06, CS82, CB20, ESM98, FBHJ04, Rah96, Rok98, TW03]. **OPFMM** [CRG01]. **opportunities** [Ano90]. **Optical** [Ful97]. **Optimal** [DKG92b, HHKP09, BWS+95, BME90, CRG01, MG05, PRL03]. **optimal-parameter** [CRG01]. **Optimization** [BK15, MBS15]. **Optimizations** [DMC20]. **Optimizing** [PD15, ZBS11, CB20]. **Orbitals** [Gus98, Le 97, ZZ93, KS98a]. **Order** [Bor86, LS93, RRR05, Alu96, DC07, GH08, GBMN06, GL96, HHL+21, PRL03, Pta21, TWYC06, Tau03a, Tau04]. **Oregon** [ACM99, IEE93]. **organic** [CKS91]. **organization** [AO10]. **organizations** [TD09]. **Origin** [Le 97]. **orthotropic** [ON09b]. **Oscillatory** [CCFG23, ZX19]. **other** [ZB95]. **overlapping** [KP05a]. **overview** [SB96].

P [PG96b]. **PA** [ACM96]. **Package** [HXC21]. **pair** [CK95a]. **Pairwise** [BP88, CKS91]. **Palazzo** [Ano95a]. **Panel** [Ano97b, RRR03]. **Panels** [RRR05]. **Paper** [HOST95]. **Papers** [Ano97b, IEE92a]. **parabolic** [JH08]. **paradigms** [MMC99]. **Parallel** [AAL+01, Ano94b, ADB94, ADBGP99, B+95, BADG00, BPT+14, Bha97, BS97, BP88, CDCD97, GKS94, GCH+18, HAS02, HTA+97, HP95, HJ96, IFM09, IHM05, JBL02, JKCGJ08, Liu94, LO96a, LO96b, LCP93, MFKN03, Mak04, Mat95, MBS15, NPR93, OKF14, Per99, Pri94, SWW94, SP99, Sin95, SHHG93, Ten98, TDBEE11, WS93, WMOZ22, WSW+95, Xu95, YB01, ZJ91, Bar86, BADP96, BAAD+97, BAD01, BCAD06, BJWS96, BCL+92, BDS07, BCOY94, Car07, CRG01, CWD08, CKB11, Dub96, DKPH04, Erg11, EG13, GLS06, GKS98, GG89, GG90, Hav03, HGS90, K+96, KK95, KP05b, LCL+12, LB92b, LJ98, LBI+97, LC14, Mak93, MHI07, MG05, NKV94, OCK+03, RC97, SRK+12, Sta95b, TMES94, WLL+07, WCLD21, WS95b, WS95a, WSWL95, WSH+12, YF98, YBZL03, YBNY13, Mak93, Rod89, TL14, TDBEE11]. **Parallelism** [BGLM05]. **Parallelization** [LB91, Lea92, TCD20, BCOY93, DK93, EG08, EG09b, HYS21, LHYS24, SWW99]. **parallelized** [AiIS+21, KKLZ23, OME+92]. **Parallelizing** [CvHMS94, Sta95a]. **parameter** [CRG01]. **Parametric** [SC94]. **Park** [RSS96]. **Part** [Dem96a, Dem96b]. **Particle** [BOX00, DYP93, Gre87, MFKN03, Pri94, VTG91, AGR88a, CGR88, CC13, CB09, CKB11, DKPH04, ECL02, FMI+93, GY08, GR87, Gre88, KM00, KK16, Kro99, KP05a, LGQZ21, LRJ+99, PJY95, WY05, WS95b, YGSR01]. **particle-in-cell** [CC13]. **Particle-Mesh** [BOX00, DKPH04]. **particle-particle** [PJY95]. **particle-reinforced** [WY05]. **Particles** [BP88, HE88, BP93, CPP93, DKG92a, GDK89, Ich02, JdR+18, Kon93, LDB96, YRGS13]. **partition** [AYO20]. **Partitioning** [BB87, Ten98, EG09b, MG05]. **passing** [KP08]. **PBBFMM3D** [WCLD21]. **PDEs** [A+97]. **PEACH2** [HL15]. **PEC** [GSC01]. **Peculiar** [ZQSW94]. **pedestrian** [CRW93]. **penetrable** [ESRS01].

Pennsylvania [IEE92a]. **Pentium** [WSB+97]. **Perfect** [HAS02]. **perfectly** [GROZ04, GKD09]. **Performance** [ACM97, BGI+99, BK15, Car07, FHM99, HL15, Hol12, IEE94b, IEE96b, IEE98, LCK11, LWM+02, MKF01, NMH06, RC97, SF18, SKT94, WPM+02, CFR08, CFR10, HXC21, IYK16, INS+20, MD12, Sha06, WSB+97]. **Performing** [Sar03]. **Periodic** [CWHG97, RO04, RW94, Ami00, BS19, CPP93, CFH89, DKG92c, FLZB97a, FLZB97b, GK04, HM95, HNO06, KS98a, KS98b, KS04, LDB96, ŁBGS16, LCZ07, NN12, ON08a, ON08b, ON09a, ON09b, PG96b, SKT93, Sin95, YB97, YAO18, YAO20]. **periodicity** [YS18]. **Petascale** [OYK+14, YBNY13]. **Pflops** [MHI07]. **PGAS** [MRH14]. **PGAS-FMM** [MRH14]. **Phantom** [TYNO12]. **Phantom-GRAPE** [TYNO12]. **Phoenix** [ACM03]. **photonic** [ON08b]. **Phys** [Dac10]. **physics** [Gre94, PG96a]. **Piecewise** [GSS98b]. **Pipeline** [HZH+18]. **Pittsburgh** [ACM96, IEE92a]. **plan** [Ano90]. **Planar** [GGM01]. **Planck** [Lem98, Lem04]. **plane** [GKM96, MD98]. **planetesimals** [MKFD02]. **plasma** [AGR88b, JKCGJ08, PG94]. **plasmon** [GIS98]. **plasmonic** [ATR+12]. **platform** [BAD01]. **platforms** [IYK16]. **plus** [CG04]. **PMD** [Win95]. **Point** [CK95b, HXC21, LKM02, Rei99]. **points** [STZ14]. **Poisson** [WZC21b, AC17, BH03, EG01, GL96, LJ98, LCHM10, LCHM13, MCBB07, MGM95, Mil08, RS20, RŠŽ09, VTG91]. **polar** [BPK85]. **polarisable** [HHKP09]. **Polarizability** [PNB94]. **polyelectrolyte** [FOCB96]. **Polygons** [BT03]. **polyharmonic** [BL97, BCR01, BPT07]. **polymers** [BCOY94]. **Polynomial** [DGR96, PRT92, Rei99]. **Polynomials** [Pan92]. **Polytechnic** [BR93]. **poroelastic** [RSBS19]. **Portable** [BK15, BS97, OCK+03, WS95b, WS95a]. **Portland** [ACM99, IEE93]. **posed** [HM95]. **posteriori** [XTH09]. **Potential** [CK95b, Gre87, Gre90a, HA17, SPS96, YR99, CK95a, GB11, Gre88, GR88a, GD07b, HHKP09, HF92, HR98, HHL+21, HLN24, LCQF18, LGQZ21, Mil08, OLLL03, PA14, Rok85, Tau03a, WXQL08]. **Potentials** [CJ05, MB16, McK96, Pie93, DM90, GORV21, LDB96, SH07]. **power** [PRT92]. **PPPM** [YF05, ZB14]. **Practical** [BN97, Pan95, CAJ09, Mak93]. **practice** [CK00]. **Prager** [GCH+18, LGG+13]. **pragmatic** [SB96]. **Precise** [Ami00]. **preconditioned** [BGGC06, GD07a]. **Preconditioner** [CDGS03, CDGS05, CPD17, Car06, DDL13, Of08, TCD17]. **Preconditioners** [MG11, ABD04, Car09]. **Preconditioning** [NN12, Beb06, FPG05, LZL04, MG07, MG09, RCWY07]. **predictor** [TWYC06]. **predictor-corrector** [TWYC06]. **preeminent** [YB12]. **preprocessing** [SK04]. **Prescription** [GS98b, CRW93]. **presented** [Ano97b]. **Pressure** [YAO18, YRGS13]. **Price** [WSB+97]. **Price/performance** [WSB+97]. **primitive** [Sel22]. **Princeton** [HM86, HDG+15]. **Principles** [OKF14]. **Pro** [WSB+97]. **Problem** [APG94, AGPS98, Ano94a, Ano94c, Dem95, Dem96a, Dem96b, HTG02, MTES94, Yin15, CCKL09, DH86, DHM03, Gre90b, IHM05, Kat89, KS98a, Mil08, Pud16, SSF96, TL14, WXQL08]. **Problems** [BB87, EMRV92, GA96b, KK95, LJ96b, LJ96a, MG11, MBS15, SWW94, SG97, WZC+17, AP00, AD05, ATR+12, BSL09, Bes00, BCP08, BHGR04, BHGR05, BGGC06, CC04, CC05, Car09, EG08, EG09a, Erg11, FST05, Fuj98, GDDC08, GLS06, HM95, HNO06, HU97, HHL+21, HLN24, JH08, Lab98, LCQF18, Lin95, Liu08, LHYS24, MIES90, Oku96, ON08a, ON08b, ON09b, Rah96, RSBS19, RO04, SCM+90, TWYC06, WJYO06, WY07b, WSWL95, XWY+08, XJM08, iYNK02, ZY05].

Proceedings [ACM96, ACM97, AG88, ERT12, Hol12, HM86, IEE02, Kar95, LCK11, Rod89, Ano92, Ano95a, IEE92a, IEE98, KK88, PA02, Wel91, B$^+$95, BGPW00, HB93, HTA$^+$97, IEE90, IEE92b, IEE93, IEE94b, IEE94c, IEE96b]. **Proceedings.** [IEE96c]. **process** [JdR$^+$18]. **processes** [Sal96]. **Processing** [B$^+$95, HTA$^+$97, BCOY94, Rod89]. **Processor** [WWF02, FL13, HYS21, MHI07]. **processors** [GD08]. **produced** [Kon93]. **products** [And08]. **Professor** [Wil00]. **Program** [CDCD97, YB01, App85, LBI$^+$97, WS95b, Win95]. **Programmable** [PA02, HFKM98]. **programming** [MRH14]. **Programs** [BGLM05, RC97]. **PROGRAPE** [HFKM98]. **PROGRAPE-1** [HFKM98]. **Progress** [Ano95b, Ano96, Ano97a]. **Prolate** [KLZ$^+$06]. **Propagation** [Ano97b, IEE94a, IEE95, IEE96a, IEE97, WC94a, WC94b, CHJN03, GLS06]. **propagator** [ZB95]. **properties** [WY05, WY07a]. **Protein** [NT96, Kan15, KSS10, KS11, NT94]. **protein-protein** [KSS10]. **proteins** [ZB95]. **protonatable** [Kan15]. **Provably** [Ten98]. **Proxy** [HXC21]. **pseudo** [CKS91, OFH$^+$08]. **pseudo-pairwise** [CKS91]. **pseudo-spectral** [OFH$^+$08]. **pseudoparticle** [Mak99]. **Pseudospectral** [Boy92b, KLZ$^+$06]. **Purpose** [Ano94a, BGGT90, CKE08, FM96, FHM99, KFMT00, MTES94, MT98, MFKN03, EIM$^+$92, EFT$^+$93, FMI$^+$93, FM95, HFKM98, KMT94, MIES90, MT95, OMH$^+$94, OME$^+$92, SCM$^+$90, TMES94].

Quadrature [WK18]. **quadratures** [GORV21]. **Quantum** [SPS96, KLM$^+$09, SSF96]. **quartic** [WHG96b]. **quasars** [SWJ$^+$05]. **Queen** [IEE97].

Radar [Gue97, Ano97b, Ano97b]. **Radial** [Buh03, BLA05, BL97, BN98, BCR01, CBN02, GD07a, PSN04, Yin06]. **Radiation** [CSMCxx, SG97, CWK08, YRGS13]. **Radiosity** [SHT$^+$95, HSA91, MMNB06]. **Radome** [BVW96]. **Random** [MPZ21, CG97, ESRS01, ST06]. **Range** [Pie93, AO10, BAL91, BDS07, BP93, Ess95, KMC09]. **range-limited** [BDS07]. **ranged** [BPK85]. **rank** [HW11]. **Rapid** [Gre87, KLZ$^+$06, Rok85, Rok90, BH03, EGHT97, Gre88, GR88a, HSA91, LGQZ21, PJY95]. **rational** [LX23]. **Ray** [WC94a, WC94b]. **Ray-Propagation** [WC94b]. **RCS** [BVW96, BV96b, BV96a, Gue97, RCWY07]. **reacting** [NMDK99]. **reaction** [DC07]. **ready** [BAD01]. **Real** [MSS20, MKF01, SH07]. **Real-time** [MSS20]. **realistic** [NKV94]. **rectangular** [AYO20]. **Recurrence** [CSA95]. **Recursions** [GD03]. **recursive** [YCM25]. **Red** [WSB$^+$97]. **redefinition** [PJY96]. **Reduced** [HW11, HF92, DKG92c]. **Reduced-rank** [HW11]. **reduction** [JP89]. **reference** [ZB95]. **regime** [QCG15]. **region** [MKFD02]. **regular** [Bes00, CDF10, HW10]. **regularization** [JP89]. **reinforced** [WY05, WY07a]. **related** [Ano90, BCH93, GCG$^+$99, GODZ10, KMC09, ON08b]. **relations** [CSA95]. **relativistic** [KKLZ23]. **relaxation** [WLB22]. **Remarks** [CCG$^+$06a]. **Renewing** [Ano90]. **renormalization** [BG94]. **Reply** [KAN96]. **representation** [DM07, GODZ10, STZ14, TW03]. **Research** [ERT12, Ano90]. **resonances** [GIS98, RTZ$^+$96]. **Resonant** [ES04, Sat10]. **Resource** [HZH$^+$18]. **review** [Ano95b, Ano96, Ano97a, Gav11]. **reviews** [Les96]. **Revision** [CC12, ZHPS10]. **Revisiting** [KS04]. **Rigid** [BT95, JBL02, CAJ09, HNO06, ZBG15]. **rigid-inclusion** [HNO06]. **rigorous** [SKPP95]. **Ring** [BHGS90]. **Rockefeller** [IEE90]. **Rokhlin** [HM95, HS08, SB98].

Rome [MBA97]. **Root** [GGM01]. **Rotating** [WHG96b]. **Rotation** [GD03, Dac06]. **Rotne** [GCH+18, LGG+13]. **Rough** [JMC97, JMBC98, ESRS01, JBMC98]. **Round** [DH86]. **Round-off** [DH86]. **RPYFMM** [GCH+18]. **run** [RC97]. **run-time** [RC97]. **Runs** [Bar90]. **Runtime** [AAB+17].

SAI [MG09]. **Salt** [Hol12]. **sampling** [LX17]. **San** [ACM97, B+95, Kar95]. **Santa** [Ful97]. **Savart** [Ros06]. **SC'11** [LCK11]. **SC2002** [IEE02]. **SC2003** [ACM03]. **SC97** [ACM97, ACM97]. **SC'99** [ACM99]. **Scalability** [RS97]. **Scalable** [Ano94b, BHE+94, BHER94, GKS94, GKS98, HAS02, HGD11, IEE94b, MSV92, OCK+03, OKF14, YB12]. **scalar** [GD07b, KSC99]. **Scale** [BADG00, OKF14, SRPD06, WLMP99, ZQSW94, Ang17, ATR+12, EG08, Erg11, EG13, FLZB97a, FLZB97b, GF06b, GF06a, HHM19, INS+20, KP08, LCQF18, LGQZ21, LCZ07, LWM+02, PN95, WY05, WY07a, WSH+12, XWY+08]. **Scaling** [CDCD97, FRE+08, YBNY12, Goe99, KLM+09, SSF96, WJGHG96b]. **Scatterers** [HOST95]. **Scattering** [BVW96, EMRV92, GA96a, GA96b, HAS02, JMC97, JMBC98, LJ96b, LJ96a, SHMC97, SMC97, SLC97, ZCG00, AP99, AP00, AD05, BN07, BGGC06, CC04, CC05, Car09, CWK08, DH04a, ESRS01, EG08, EG09a, Fuj98, GH08, GSC01, GD05, HC10, HW10, JBMC98, Lab98, LHYS24, LC94, MG07, Rah96, RTZ+96, Rok90, SM97, SHM98, TCW08, TC09, WJYO06]. **scheduling** [YF98]. **scheme** [NMDK99, NMH06, WLL+07]. **Schrödinger** [ZKL+07]. **Schur** [MG11]. **Schwarz** [BT03]. **Sci** [BEM94]. **Science** [FHM99, IEE92a]. **sciences** [SM05]. **Scientific** [B+95, HTA+97, MT98, MSV92, CGL03, LKM02, MHI07, PD89, Rod89]. **Screened** [BFO99, GH02, HJZ09, ZHPS10]. **Seattle** [IEE94a, LCK11]. **Second** [IEE96c, AHLP93, BSSF96b, KS11, LX22, Tau04]. **Section** [Gue97]. **seismic** [Fuj98]. **self** [TYON12]. **self-gravitating** [TYON12]. **Seminar** [RSS96]. **semiseparable** [CG04]. **sensitivity** [DH86]. **Sensor** [Ano97b]. **separated** [Eng11]. **September** [Ano95a]. **Sequential** [WSW+95]. **series** [CC04, CC05, ZHPS11]. **set** [TYON12, TYNO12]. **Sets** [CK95b, PD15, Eng11]. **Seventh** [B+95]. **Sham** [BSSF96b]. **shape** [LM02]. **shaped** [YRGS13]. **shared** [HS95, RC97, Ske89]. **shared-memory** [Ske89]. **sharing** [BADP96]. **shells** [CAJ09]. **short** [BG97, BP93]. **short-range** [BP93]. **shunt** [SGD+04]. **SIAM** [B+95, BEM94, HTA+97, RSS96, Rod89]. **Sides** [BT03]. **signature** [Ano97b]. **Siloxane** [MPPA96]. **Siloxane-Based** [MPPA96]. **SIMD** [TYON12, TYNO12]. **simple** [AB95, PJY95]. **simplified** [YCM25]. **Simulated** [MPZ21]. **Simulating** [ZBG15, ZGI+10, VGZB09, ZB95]. **Simulation** [AT87, And99, BADG00, CKS91, FM96, HE88, KFM99, LCE+06, MI96, Ten98, WPM+02, AGR88a, App85, BCM02, BAAD+97, BCL+92, DRS96, FLZB97a, FLZB97b, FMI+93, FM95, GF06b, GKZ07, HN10, HYS21, HGS90, HHM19, KMT94, LM02, LWM+02, MI95, MFK00, MKFD02, MD12, OYK+14, OMC08, PG94, SWW99, Spr05, TYON12, TYNO12, WYW05, Win95, YB97, YNS+09, YBNY13]. **Simulations** [Aar85, AAL+01, Ano94b, ADBGP99, Bag02, BHGS90, BH88, GP93, GKS94, HP95, IFM09, KFMT00, LRJ+99, MT98, MFKN03, MPPA96, OKF14, SRPD06, SWJ+05, WLMP99, WN14, YF05, AGR88b, ATMK03, AB95, BAL91, BDS07, BCOY93, BCOY94, CL91, CGR88, CWD08, CB09, DKG92a, EIM+92, EFT+93, EGHT97, ESRS01, FOCB96, FRE+08, GF06a, GKS98, GR87,

GDK89, GCH^{+}18, HFKM98, HNY^{+}09, KM00, K^{+}96, Kro99, KP08, LBC91, LKM02, MT95, MG05, MMC99, OME^{+}92, PA14, Sal96, Sha06, SKT93, SKT94, TMES94, VCM00, Wam99, WS92, WSH^{+}12, Xue98]. **simulator** [BSL11]. **Sinc** [Boy92a]. **Single** [CJ05, GP08]. **Singular** [FBHJ04, QCG15, RTA^{+}08]. **singularities** [Pel98]. **sized** [Sat10]. **sizes** [LCZ07]. **skeletonization** [YCM25]. **Skeletons** [SW94]. **Slater** [Gus98, ZZ93]. **Slater-Type** [Gus98, ZZ93]. **slightly** [ZD05]. **smooth** [RKRRL21]. **SNE** [MPZ21]. **Society** [IEE95, IEE96a, IEE97]. **Software** [Kan15, TDBEE11, SF18, TYNO12]. **solid** [Bat03, PJY96, WL96, hYtWbWL08]. **solids** [WYW05]. **Solution** [ATR^{+}12, GA96a, LJ96b, LJ96a, SG97, SC94, SC95, AHLP93, AP03, AD05, Atk97, BH03, BHGR04, BHGR05, CJL^{+}97, EG08, EG09a, FLZB97a, FLZB97b, GDDC08, Gas97, GLS06, Gre90b, HW10, PN95, Rok85, Rok90, Sel22, WFC08, WSWL95, YSM05, ZC00]. **Solutions** [Erg11, HC10, KS11]. **solvation** [FGM11]. **Solved** [MG11]. **solvent** [DC07]. **Solver** [BOX00, CPD17, MGM95, SLCL98a, SLCL98b, Xu95, AC17, BME90, CCZ97, CHL06, EG01, GL96, GP08, GA24, HLL08, Kan15, LJ98, LCHM10, LCHM13, RS20, SRK^{+}12]. **Solvers** [GSS98b, BME93, BEM94]. **Solving** [HTG02, VTG91, Car06, Car07, LC93, LC94, MCBB07, MMNB06, OLL04, XJM08, ZCL^{+}98]. **some** [Sha06]. **sound** [CAJ09]. **Source** [SB98, CKB11]. **Space** [BT95, WMOZ22, YF98, BSL09, BKM09, CB14, GSC01, GG16, HM95, HS95, KKLZ23, SRK^{+}12]. **space-charge** [KKLZ23]. **Space-Time** [WMOZ22, SRK^{+}12]. **Space/time** [YF98]. **Space/time-efficient** [YF98]. **Spaces** [BF78]. **Spanning** [BF78]. **Sparse** [GOS99, LZL04, Rok98, Tau03a, LOSZ07a, MG09, RŠŽ09, TW03]. **sparse-approximate-inverse** [MG09]. **Spatial** [BT95, BLA05, CvHMS94, ZT07]. **Special** [Ano94a, BGGT90, CKE08, FM96, FHM99, KFMT00, MTES94, MT98, MFKN03, EIM^{+}92, EFT^{+}93, FMI^{+}93, FM95, HFKM98, KMT94, MIES90, MT95, OMH^{+}94, OME^{+}92, SCM^{+}90, TMES94, MC92]. **Special-Purpose** [Ano94a, CKE08, FM96, FHM99, KFMT00, MTES94, MT98, MFKN03, FM95, HFKM98, KMT94, MIES90, MT95, OMH^{+}94, OME^{+}92, SCM^{+}90, TMES94]. **spectra** [ES04]. **Spectral** [RCWY07, OFH^{+}08, PN95, TXL19]. **Speeding** [CK20, AO10]. **sphere** [BP03, CDJ07, DC07, Lin95]. **spheres** [GD05]. **spherical** [GODZ10, KSC99, PJY96, ST02, YR98]. **Spline** [CS98b, DKG92b]. **Splines** [CS98a, BL97, BCR01, BPT07]. **Square** [GGM01]. **Stability** [Nil04, Sud04]. **stabilization** [CX21]. **stable** [CX21, DH04b]. **standard** [BCP08]. **static** [VOD08]. **Station** [ERT12]. **statistical** [Kan15]. **Steepest** [JMC97, JMBC98, ESRS01]. **steepest-descent** [ESRS01]. **Stellar** [HM86]. **Step** [BS93, FLZB97a, FLZB97b, KM00, RCWY07]. **stepping** [BSS97]. **stochastic** [FST05, Sal96]. **Stokes** [GKM96, GK04, Sel22, Tau03a, TG08, WLL^{+}07]. **Stokesian** [Ich02]. **Storage** [Hol12, LCK11]. **strategies** [CX21, WLB22]. **Strategy** [BB87, BCOY93, EG09b, HLN24]. **stratified** [ZCL^{+}98]. **Stress** [BS19, GG16]. **Strips** [GA96a]. **strong** [Kan15, YCM25]. **Structural** [BPK85]. **Structure** [BADG00, NT96, ZQSW94, AYO20, GF06b, GF06a, Goe99, Kat89, KS98a, NT94]. **Structures** [And99, CSMCxx, GGM01, MI96, RW94, WPM^{+}02, Car09, CWK08, EG13, LCZ07, WS92, ZCL^{+}98, ZY05]. **studies** [RTZ^{+}96]. **Study** [BGLM05, HM86, Pri94, Dar97]. **studying**

[Kro01]. **sub** [LCZ07]. **sub-entire-domain** [LCZ07]. **Subdivision** [BT95]. **Summation** [CWA14, LS93, Ami00, BAL91, IHM05, SF18, ZB14]. **Summer** [RSS96]. **Sums** [DNS90, BG94, DYP93, KS04, RO04, SL97b]. **Sunnyvale** [Wel91]. **Supercomputers** [FQG+92, HM86, BAD01]. **Supercomputing** [ACM96, Ano92, IEE90, IEE92b, IEE93, IEE94c, Kar95, Ano92, KK88]. **Surface** [MG11, CCZ97, ESRS01, ZBG15]. **Surfaces** [CSMCxx, HAS02, JMC97, JMBC98, GH08, JBMC98, RKRRL21]. **Surfaces-Wire** [CSMCxx]. **suspended** [VGZB09]. **SW26010** [HYS21, LHYS24]. **switch** [SGD+04]. **Switching** [HL15]. **Symbolic** [Pie93, CB20]. **symmetric** [CG04, DMC20, OSW06a]. **Symposium** [Ano97b, HB93, IEE92a, IEE94a, IEE95, IEE96a, IEE96b, IEE97, PA02, K+96, Mak93]. **Syracuse** [IEE96b]. **System** [BGI+99, RGKM12, BAAD+97, LGQZ21, TMES94, ZB95, HTG02]. **Systems** [AAB+17, CPD17, GP93, Gre87, HEGH14, MT98, VTG91, YF05, AB95, BS19, BWS+95, BGGC06, CL91, CDF10, CFH89, DYP93, DKG92c, EIM+92, EFT+93, Gre88, Ich02, KS98a, KS98b, KN95, LM02, ŁBGS16, LB92a, LBI+97, LCM07, LCHM10, LCHM13, PGB05, PG96b, TYON12, YB12, YAO20, ZB95]. **Systolic** [BHGS90, DHM03].

T3D [BAAD+97]. **tails** [ADG96]. **tangential** [GH08]. **Target** [SB98, GSC01]. **targets** [Ano97b]. **Task** [AAB+17]. **Task-Based** [AAB+17]. **Taylor** [WCZ+20]. **tearing** [LS05, LOSZ07a, LOSZ07b, OSW06b]. **Technique** [WZC+17, Gas97, KLM+09]. **Techniques** [CDGS03, CDGS05, PRT92, SWW99]. **Telescoping** [LRW95]. **Template** [BGLM05]. **Tennessee** [IEE94b]. **tensor** [BS19, CB14, CSA95, GCH+18, HC08, HLL+18, LGG+13, YAO18]. **Tensors** [PNB94]. **Terabytes** [IEE02]. **teraFLOPS** [TMES94]. **Term** [DNS90]. **terms** [JP89]. **test** [AB95]. **Tflops** [Ano94a, HNY+09, HN10, MTES94, MFK00, MKF01, MKFD02]. **theorem** [KSC99, Lab98]. **theorems** [HC08]. **Theoretical** [CC15]. **theory** [AP99, BS19, Buh03, CK00, GD07b, K+96, ŁBGS16, MSS20, Pel98, Rok85, Rok90, Tau03a]. **thermodynamics** [Kan15]. **Thin** [ZCL+98, CAJ09, ZY05]. **Thin-stratified** [ZCL+98]. **Third** [KK88, Rod89, Bha97]. **Thousands** [BT03]. **Three** [CS98a, JMBC98, LO96a, Nil04, Pie93, Pri94, SL91, SC95, WSW+95, YB97, BSL09, BPT07, CWK08, CGR99, CCG+06b, ESRS01, ES04, ESM98, GR88a, GR97, GH02, GD06, GD09, LB92b, LCQF18, LGQZ21, MCBB07, OLLL03, PSS95, SL97a, Tak14, TSIM16, TC09, TG08, WSWL95, YBZ04, YAO20]. **Three-Body** [Pie93]. **Three-Dimensional** [JMBC98, Pri94, WSW+95, YB97, BSL09, CWK08, ESRS01, ES04, ESM98, LCQF18, LGQZ21, OLLL03, PSS95, Tak14, TC09, TG08, WSWL95, YAO20]. **tiers** [WHG96a]. **Time** [BS93, MD98, WMOZ22, BSS97, FLZB97a, FLZB97b, GD07b, KM00, MSS20, OFH+08, RC97, SRK+12, VW02, Xue98]. **Time-dependent** [MD98, MSS20]. **time-domain** [VW02]. **time-efficient** [YF98]. **time-harmonic** [GD07b]. **time-step** [KM00]. **Top** [Cip00, DS00, MBS+00]. **topological** [BN07]. **toroidal** [CKS91]. **Toronto** [HB93]. **Touchstone** [FQG+92]. **TPM** [Xu95]. **traces** [HLL+18]. **trained** [HHKP09]. **transfer** [GODZ10, KMC09]. **Transform** [EB96, EB94, GS91, HLL08, HW11, LHL08, OLLL03, OLL04, Sar03, ST02, Sud04, Boy92b, EMT99, GS98a]. **Transformation** [DNS90]. **transforms** [DR95]. **transient** [ESM98]. **Translation** [GD03, ESM98, GD07b, Rah96, Rok98, TSIM16].

translations [RKRRL22]. **translator** [HS08]. **transpose** [JH08]. **Transputer** [Wel91, CKS91, LB91]. **Transputers** [BHGS90]. **Transputing** [Wel91]. **traversal** [WVK21]. **treatment** [KS98a]. **Tree** [And99, ADB94, ADBGP99, BH89, Bar90, BADG00, BOX00, BH88, CDM98, CWA14, JdR^{+}18, SWW94, WPM^{+}02, WS93, WN14, WSW^{+}95, AYO20, BADP96, BAAD^{+}97, BAD01, BCAD06, BJWS96, Dub96, GY08, JP89, PD89, PG94, PG96a, Pud16, Wam99, WS92, WVK21, WSWL95, WSH^{+}12, Xue98, JKCGJ08]. **Tree-Code** [CDM98]. **Treecode** [KFM99, Mak04, SW94, DKPH04, WS95a, WSB^{+}97]. **Treecodes** [GSS98a, GSS00]. **TreePM** [Bag02, IFM09, YF05]. **Trees** [BF78]. **trenches** [TCW08]. **Trends** [MBS15, Car09, CGL03, Les96]. **triangulated** [RS94]. **Truly** [APG94, Ano94c]. **truncated** [TCW08]. **truncating** [BPK85]. **Truncation** [OC03, AP00, AB95, CC04, CC05]. **tube** [Lin95]. **tumors** [ES04]. **tuned** [YB12]. **tuning** [MKF01, NMH06]. **turbulence** [HNY^{+}09, YNS^{+}09, YBNY13]. **Turkey** [Ano97b]. **Two** [LS93, McK96, Pan95, Pie93, RRR05, BL97, Car06, CHL06, CCG^{+}06a, CC10, CC12, ECL02, EG01, GH98, JKCGJ08, Kro01, NT09, PSPS95, RRR03, Rok90, Rok98, RCWY07, Sel22, SKPP95, WY07b, XJM08, YBZ04, YAO20]. **Two-Center** [Pan95]. **two-component** [JKCGJ08]. **Two-Dimensional** [LS93, BL97, CC10, CC12, ECL02, GH98, Kro01, NT09, PSPS95, RRR03, WY07b, XJM08]. **two-dimensions** [Sel22]. **two-grid** [Car06]. **two-step** [RCWY07]. **Type** [Gus98, ZZ93].

U.C.L.A [AG88]. **U.S.** [Ano90]. **ultra** [DM07, DM12]. **ultra-weak** [DM07, DM12]. **ultracold** [JKCGJ08]. **Uncertainty** [MBS15]. **Unified** [JBL02]. **Uniform** [BB87, LX23]. **uniqueness** [YSM05]. **unit** [DKG92c, KS98b]. **Universe** [BADG00, ZGI^{+}10, BAD01]. **University** [IEE94a]. **unknowns** [YBK^{+}11]. **Unrelaxed** [PNB94]. **unstructured** [HKS05, MSV92]. **UPC** [ZBS11]. **Updates** [Kan15]. **Updating** [HA17]. **upon** [TD09]. **Uranus** [MKFD02]. **USA** [Hol12, HM86, IEE96c, ACM97, IEE02, Kar95, K^{+}96]. **Use** [HM86, SPS96, Bes00, Mak93, PJY96, RTA^{+}08, SM97]. **User** [Wel91]. **Using** [BVW96, BV96b, BP88, CL12, CKE08, CS98b, CPD17, GA96a, HE88, HXC21, LKM02, LRW95, MI96, MPPA96, Per99, SG97, SHMC97, SMC97, SP99, SC94, BS19, BV96a, Bor86, BH88, CKS91, CvHMS94, DM07, ESRS01, ES04, ESM98, Gas97, GF06b, GF06a, GD05, HC10, HLL^{+}18, Kan15, KM00, ŁBGS16, LB91, LJ98, LO96b, LCZ07, LWM^{+}02, MI95, MRH14, MSS20, OYK^{+}14, Pri94, RC97, RS20, Sat10, Syl03, Tau03a, WY07a, WS92, WSWL95, YB97, YBK^{+}11, YBNY13, ZCG00]. **UT** [Hol12]. **Utah** [RSS96].

vacancies [Kon93]. **value** [Lin95, ON08a, ON09b, RTA^{+}08]. **values** [LX17]. **variable** [Tau03a, Tau04]. **variables** [JP89, Sel22]. **Variants** [YTK14, BHER94]. **Variational** [DM12, DM07]. **Vector** [CS98a, TYON12, HC08, WCLD21, XWT09]. **Vectorized** [Bor86, GDK89, BP93]. **Velocities** [ZQSW94]. **versatile** [WS95a]. **Version** [GS98a, NT96, SP01, CX21, GG89, GG90, GR97, GH02, LCM07]. **very** [BSSF96a, BSSF96b, LBI^{+}97, PSPS94]. **vesicles** [VGZB09]. **via** [AGR88b, GB11, Gue97, GD07a, GODZ10, WJGHG96b]. **videoscopie** [Ano97b]. **virial** [KS11]. **virtual** [XJM08]. **viscous** [BLA05, VGZB09]. **Vlasov** [VTG91]. **Vol** [Bat03]. **Volterra** [ZX19]. **Volume** [MB16, NT09]. **Volumetric** [ZKL^{+}07, HW10]. **Vortex** [BCH93, CK00, DD95, RRR05, WSW^{+}95, aYZ97, BLA05, CWD08, ECL02, HM95, Ros06, RS94, WSWL95, AG88]. **vortex-in-cell** [CWD08]. **vorticle** [Ang17]. **voxel** [Ham11]. **VRP** [YRB16]. **VRP-GMRES** [YRB16].

W [MD12]. **WA** [LCK11]. **Waals** [DKG92b]. **Warp** [MPZ21]. **Washington** [IEE94a, IEE94c]. **water** [BAL91, HHKP09]. **wave** [BSL09, Bes00, BGGC06, CCZ97, CCKL09, CHJN03, CRW93, ESRS01, ESM98, GLS06, LC94, MD98, Tak14, TCW08, TC09]. **Wavelet** [HKS05, BP03, RŠŽ09, XWT09, XTH09]. **wavelet-BEM** [XTH09]. **Wavelets** [A+97, CM06, Tau03a]. **WAVES** [CHJN03]. **weak** [DM07, DM12]. **well** [Eng11]. **well-separated** [Eng11]. **wFMM** [CC12]. **Wheeler** [JdR+18]. **Who** [Wil00]. **Wide** [MPZ21, KMC09]. **Wide-Warp** [MPZ21]. **wideband** [CC15, CCG+06a, CCG+06b, NT09, CC10, CC12]. **Wigner** [Dac06]. **WINE** [FMI+93]. **WINE-1** [FMI+93]. **Winter** [ERT12]. **Wire** [CSMCxx]. **without** [ADG96, And92, HP95, Mak99, Pel98]. **Wood** [ON09a]. **Worcester** [BR93]. **work** [BADP96, DTG96, Rei99]. **work-** [BADP96]. **Workshop** [ERT12, HM86, AG88]. **workstations** [LJ98]. **World** [Wel91]. **WOTUG** [Wel91]. **Would** [Wil00].

X [Ful97]. **X10** [MRH14]. **x86** [TYON12, TYNO12]. **x86_64** [NMH06]. **XV** [BR93]. **XXVI** [Bre04].

Yamakawa [GCH+18, LGG+13]. **York** [IEE90, IEE90, IEE96b]. **Yukawa** [BFO99, HJZ09, ZHPS10].

zero [GG16, SF18, ZC00]. **zero-multipole** [SF18]. **Zonal** [BDS07].

References

Ainsworth:1997:WMM

[A+97] M. Ainsworth et al., editors. *Wavelets, multilevel methods and elliptic PDEs*, Numerical mathematics and scientific computation. Oxford University Press, Walton Street, Oxford OX2 6DP, UK, 1997. ISBN 0-19-850190-0. LCCN QA374 .W38 1997. The Seventh EPSRC Numerical Analysis Summer School was held at the University of Leicester during the summer of 1996, from the 8th to the 19th of July.

Agullo:2017:BGB

[AAB+17] Emmanuel Agullo, Olivier Aumage, Berenger Bramas, Olivier Coulaud, and Samuel Pitoiset. Bridging the gap between OpenMP and task-based runtime systems for the Fast Multipole Method. *IEEE Transactions on Parallel and Distributed Systems*, 28(10):2794–2807, October 2017. CODEN ITDSEO. ISSN 1045-9219 (print), 1558-2183 (electronic). URL `https://www.computer.org/csdl/trans/td/2017/10/07912335-abs.html`.

Amor:2001:DPF

[AAL+01] M. Amor, F. Argüello, J. López, O. Plata, and E. L. Zapata. A data parallel formulation of the Barnes–Hut method for N-body simulations. *Lecture Notes in Computer Science*, 1947:342–??, 2001. CODEN LNCSD9. ISSN 0302-9743 (print), 1611-3349 (electronic). URL http://link.springer-ny.com/link/service/series/0558/bibs/1947/19470342.htm; http://link.springer-ny.com/link/service/series/0558/papers/1947/19470342.pdf.

Aarseth:1985:MTS

[Aar85] Sverre J. Aarseth. Direct methods for N-body simulations. In Jeremiah U. Brackbill and Bruce I. (Bruce Ira) Cohen, editors, *Multiple Time Scales*, volume 3 of *Computational techniques*, pages 377–418. Academic Press, New York, NY, USA, 1985. ISBN 0-12-123420-7. LCCN QA377 .M946 1985.

Auffinger:1995:STE

[AB95] Pascal Auffinger and David L. Beveridge. A simple test for evaluating the truncation effects in simulations of systems involving charged groups. *Chemical Physics Letters*, 234(4–6):413–415, 1995. CODEN CHPLBC. ISSN 0009-2614 (print), 1873-4448 (electronic).

Antoine:2004:APE

[ABD04] X. Antoine, A. Bendali, and M. Darbas. Analytic preconditioners for the electric field integral equation. *International Journal for Numerical Methods in Engineering*, 61(8):1310–1331, 2004. CODEN IJNMBH. ISSN 0029-5981 (print), 1097-0207 (electronic).

Angyan:1994:CAM

[AC94] János G. Ángyán and Christophe Chipot. A comprehensive approach to molecular charge density models: From distributed multipoles to fitted atomic charges. *International Journal of Quantum Chemistry*, 52(1):17–37, September 15, 1994. CODEN IJQCB2. ISSN 0020-7608 (print), 1097-461X (electronic).

Askham:2017:AFM

[AC17] T. Askham and A. J. Cerfon. An adaptive fast multipole accelerated Poisson solver for complex geometries. *Journal of Computational Physics*, 344(??):1–22, September 1, 2017. CODEN JCTPAH. ISSN 0021-9991 (print), 1090-2716 (electronic). URL http://www.sciencedirect.com/science/article/pii/S002199911730342X.

ACM:1996:SCP

[ACM96] ACM, editor. *Supercomputing '96 Conference Proceedings: November 17–22, Pittsburgh, PA*. ACM Press and IEEE Computer Society Press, New York, NY 10036, USA and 1109 Spring Street, Suite 300, Silver

Spring, MD 20910, USA, 1996. ISBN 0-89791-854-1. LCCN ???? URL http://www.supercomp.org/sc96/proceedings/. ACM Order Number: 415962, IEEE Computer Society Press Order Number: RS00126.

ACM:1997:SHP

[ACM97] ACM, editor. *SC'97: High Performance Networking and Computing: Proceedings of the 1997 ACM/IEEE SC97 Conference: November 15–21, 1997, San Jose, California, USA*. ACM Press and IEEE Computer Society Press, New York, NY 10036, USA and 1109 Spring Street, Suite 300, Silver Spring, MD 20910, USA, 1997. ISBN 0-89791-985-8. LCCN ???? URL http://www.supercomp.org/sc97/proceedings/. ACM SIGARCH order number 415972. IEEE Computer Society Press order number RS00160.

ACM:1999:SOC

[ACM99] ACM, editor. *SC'99: Oregon Convention Center 777 NE Martin Luther King Jr. Boulevard, Portland, Oregon, November 11–18, 1999*. ACM Press and IEEE Computer Society Press, New York, NY 10036, USA and 1109 Spring Street, Suite 300, Silver Spring, MD 20910, USA, 1999.

ACM:2003:SII

[ACM03] ACM, editor. *SC2003: Igniting Innovation. Phoenix, AZ, November 15–21, 2003*. ACM Press and IEEE Computer Society Press, New York, NY 10036, USA and 1109 Spring Street, Suite 300, Silver Spring, MD 20910, USA, 2003. ISBN 1-58113-695-1. LCCN ????

Antoine:2005:AIE

[AD05] X. Antoine and M. Darbas. Alternative integral equations for the iterative solution of acoustic scattering problems. *Quarterly Journal of Mechanics and Applied Mathematics*, 58(1):107–128, 2005. CODEN QJMMAV. ISSN 0033-5614 (print), 1464-3855 (electronic).

Antonuccio-Delogu:1994:PTB

[ADB94] V. Antonuccio-Delogu and U. Becciani. A parallel tree N-body code for heterogeneous clusters. *Lecture Notes in Computer Science*, 879:17–32, 1994. CODEN LNCSD9. ISSN 0302-9743 (print), 1611-3349 (electronic).

Antonuccio-Delogu:1999:PTA

[ADBGP99] V. Antonuccio-Delogu, U. Becciani, M. Gambera, and A. Pagliaro. Parallel tree algorithms for N-body simulations. *Lecture Notes in Computer Science*, 1557:579–580, 1999. CODEN LNCSD9.

ISSN 0302-9743 (print), 1611-3349 (electronic).

Adamson:1996:CCT

[ADG96] Ross A. Adamson, Jeremy P. Dombroski, and Peter M. W. Gill. Chemistry without Coulomb tails. *Chemical Physics Letters*, 254(5-6):329–336, 1996. CODEN CHPLBC. ISSN 0009-2614 (print), 1873-4448 (electronic).

Anandakrishnan:2011:GBA

[ADO11] Ramu Anandakrishnan, Mayank Daga, and Alexey V. Onufriev. An $n \log n$ generalized Born approximation. *Journal of Chemical Theory and Computation*, 7(3):544–559, 2011. CODEN JCTCCE. ISSN 1549-9618 (print), 1549-9626 (electronic).

Anderson:1988:VMP

[AG88] Christopher Radcliff Anderson and Claude Greengard, editors. *Vortex Methods: Proceedings of the U.C.L.A. workshop held in Los Angeles, May 20–22, 1987*, volume 1360 of *Lecture Notes in Mathematics*. Springer-Verlag, Berlin, Germany / Heidelberg, Germany / London, UK / etc., 1988. ISBN 0-387-50526-1 (New York), 3-540-50526-1 (Berlin). LCCN QA3 .L28 no. 1360.

Aluru:1998:DIH

[AGPS98] Srinivas Aluru, John Gustafson, G. M. Prabhu, and Fatih E. Sevilgen. Distribution-independent hierarchical algorithms for the N-body problem. *The Journal of Supercomputing*, 12(4):303–??, ???? 1998. CODEN JOSUED. ISSN 0920-8542 (print), 1573-0484 (electronic).

Ambrosiano:1988:FMM

[AGR88a] John Ambrosiano, Leslie Greengard, and Vladimir Rokhlin. The fast multipole method for gridless particle simulation. *Computer Physics Communications*, 48(1):117–125, January 1988. CODEN CPHCBZ. ISSN 0010-4655 (print), 1879-2944 (electronic).

Ambrosiano:1988:GPS

[AGR88b] John Ambrosiano, Leslie Greengard, and Vladimir Rokhlin. Gridless plasma simulations via the fast multipole method. In Kartashev and Kartashev [KK88], pages 334–342. LCCN QA 76.88 I58 1988. Three volumes. Spine title: ICS 88, Third International Conference on Supercomputing. Contents: v. 1. Supercomputing projects, applications, and artificial intelligence — v. 2. Technology assessment, industrial supercomputer outlooks, European supercomputing accomplishments, and performance and computations — v. 3. Supercomputer design, hardware and software.

Allen:1993:GIM

[AHLP93] E. H. Allen, J. B. Herendeen, P. L. Levin, and J. H. Petrangelo. A Galerkin implementation of the multipole expansion approach for accurate and fast solution of first and second kind Fredholm equations. In Brebbia and Rencis [BR93], pages 485–500. ISBN 1-85166-842-X, 1-85312-273-4, 1-56252-197-7. LCCN TA347.B69 I565 1993.

Andoh:2021:AMM

[AiIS+21] Yoshimichi Andoh, Shin ichi Ichikawa, Tatsuya Sakashita, Noriyuki Yoshii, and Susumu Okazaki. Algorithm to minimize MPI communications in the parallelized fast multipole method combined with molecular dynamics calculations. *Journal of Computational Chemistry*, 42(15): 1073–1087, June 5, 2021. CODEN JCCHDD. ISSN 0192-8651 (print), 1096-987X (electronic).

Aluru:1994:DIH

[Alu94] Srinivas Aluru. *Distribution-Independent Hierarchical N-body Methods (Greengard Method)*. Ph.d. thesis, Iowa State University, Ames, IA, USA, ???? 1994. ???? pp. URL `http://dogbert.ee.duke.edu/School/Reference/Multipole.html`.

Aluru:1996:GBA

[Alu96] Srinivas Aluru. Greengard's N-body algorithm is not order N. *SIAM Journal on Scientific Computing*, 17(3):773–776, May 1996. CODEN SJOCE3. ISSN 1064-8275 (print), 1095-7197 (electronic). URL `http://epubs.siam.org/sam-bin/dbq/article/27203`.

Amisaki:2000:PEE

[Ami00] Takashi Amisaki. Precise and efficient Ewald summation for periodic fast multipole method. *Journal of Computational Chemistry*, 21(12): 1075–1087, September 2000. CODEN JCCHDD. ISSN 0192-8651 (print), 1096-987X (electronic).

Anderson:1992:IFM

[And92] Christopher R. Anderson. An implementation of the fast multipole method without multipoles. *SIAM Journal on Scientific and Statistical Computing*, 13(4):923–947, July 1992. CODEN SIJCD4. ISSN 0196-5204.

Anderson:1999:TDS

[And99] Richard J. Anderson. Tree data structures for N-body simulation. *SIAM Journal on Computing*, 28(6): 1923–1940, December 1999. CODEN SMJCAT. ISSN 0097-5397 (print), 1095-7111 (electronic). URL `http://epubs.siam.org/sam-bin/dbq/article/32630`.

Andjelic:2008:BON

[And08] Zoran Andjelić. BEM: Opening the new frontiers in the industrial products design. In *Domain decomposition methods in science and engineering XVII*, volume 60 of *Lect. Notes Comput. Sci. Eng.*, pages 3–20. Springer, Berlin, 2008.

Angelidis:2017:MSV

[Ang17] Alexis Angelidis. Multi-scale vorticle fluids. *ACM Transactions on Graphics*, 36(4): 104:1–104:??, July 2017. CODEN ATGRDF. ISSN 0730-0301 (print), 1557-7368 (electronic).

Anonymous:1990:RUM

[Ano90] Anonymous. Renewing U.S. mathematics: a plan for the 1990s. Appendix B: Recent research accomplishments and related opportunities. *Notices of the American Mathematical Society*, 37(8):984–1008, 1990. CODEN AMNOAN. ISSN 0002-9920 (print), 1088-9477 (electronic). With a commentary by Allyn Jackson.

Anonymous:1992:SCA

[Ano92] Anonymous, editor. *Supercomputing, the competitive advantage: proceedings of the Fifth Australian Supercomputing Conference, 7–9 December, 1992*. 5ASC Organising Committee, Melbourne, Victoria, Australia, 1992. ISBN 0-86444-270-X. LCCN ????

Anonymous:1994:GOS

[Ano94a] Anonymous. GRAPE-4: A one-tflops special-purpose computer for astrophysical N-body problem. In IEEE [IEE94c], pages 429–438. ISBN 0-8186-6605-6 (paper), 0-8186-6606-4 (microfiche), 0-8186-6607-2 (case). ISSN 1063-9535. LCCN QA76.5 .S894 1994. URL `http://sc94.ameslab.gov/AP/contents.html`. IEEE catalog number 94CH34819.

Anonymous:1994:SPF

[Ano94b] Anonymous. Scalable parallel formulations of the Barnes–Hut method for n-body simulations. In IEEE [IEE94c], pages 439–448. ISBN 0-8186-6605-6 (paper), 0-8186-6606-4 (microfiche), 0-8186-6607-2 (case). ISSN 1063-9535. LCCN QA76.5 .S894 1994. URL `http://sc94.ameslab.gov/AP/contents.html`. IEEE catalog number 94CH34819.

Anonymous:1994:TDA

[Ano94c] Anonymous. Truly distribution-independent algorithms for the N-body and problem. In IEEE [IEE94c], pages 420–428. ISBN 0-8186-6605-6 (paper), 0-8186-6606-4 (microfiche), 0-8186-6607-2 (case). ISSN 1063-9535. LCCN QA76.5 .S894 1994. URL `http://sc94.ameslab.gov/AP/contents.`

`html`. IEEE catalog number 94CH34819.

Anonymous:1995:ECP

[Ano95a] Anonymous, editor. *EuMC 95: Conference proceedings / 25th European Microwave Conference 1995, Palazzo della cultura e dei congressi, Bologna, Italy, conference and exhibition, 4–7 September 1995*, volume 25. Nexus Media, Swanley, Kent, UK, 1995. ISBN 1-899919-15-5. LCCN TK 7876 E89 1995. Two volumes.

Anonymous:1995:PAC

[Ano95b] Anonymous, editor. *Progress in applied computational electromagnetics: Annual review; 11th — March 1995, Monterey, CA*, Annual Review of Progress in Applied Computational Electromagnetics 1995; conf 11//v1. Naval Postgraduate School, ????, 1995.

Anonymous:1996:PAC

[Ano96] Anonymous, editor. *Progress in applied computational electromagnetics: Annual review; 12th — March 1996, Monterey, CA*, Annual Review of Progress in Applied Computational Electromagnetics. Naval Postgraduate School, ????, 1996. Two volumes.

Anonymous:1997:PAC

[Ano97a] Anonymous, editor. *Progress in applied computational electromagnetics: Annual review; 13th — March 1997, Monterey, CA*, Annual Review of Progress in Applied Computational Electromagnetics. Naval Postgraduate School, Monterey, CA, USA, 1997. AD Reports -NTIS- AD A 1997; AD-A329118.

Anonymous:1997:RSA

[Ano97b] Anonymous, editor. *Radar signature analysis and imaging of military targets = l'Analyse de la signature radar et de la videoscopie de cibles militaires. Papers presented at the Sensor and Propagation Panel Symposium held in Ankara, Turkey, 7–10 October 1996*, number 583 in AGARD Conference Proceedings. AGARD, Neuilly sur Seine, France, 1997. ISBN 92-836-0039-8. LCCN TL500.N6 C6 no.583.

Anandakrishnan:2010:ABN

[AO10] Ramu Anandakrishnan and Alexey V. Onufriev. An $N \log N$ approximation based on the natural organization of biomolecules for speeding up the computation of long range interactions. *Journal of Computational Chemistry*, 31(4): 691–706, March 2010. CODEN JCCHDD. ISSN 0192-8651 (print), 1096-987X (electronic).

Amini:1999:ADF

[AP99] S. Amini and A. T. J. Profit. Analysis of a diagonal form of the fast multipole algorithm for scattering theory. *BIT Numerical Mathematics*, 39 (4):585–602, December 1999. CODEN BITTEL, NBITAB. ISSN 0006-3835 (print), 1572-9125 (electronic). URL `http://www.springerlink.com/openurl.asp?genre=article&issn=0006-3835&volume=39&issue=4&spage=585`.

Amini:2000:ATE

[AP00] Sia Amini and Anthony Profit. Analysis of the truncation errors in the fast multipole method for scattering problems. *Journal of Computational and Applied Mathematics*, 115(1–2):23–33, March 1, 2000. CODEN JCAMDI. ISSN 0377-0427 (print), 1879-1778 (electronic). URL `http://www.sciencedirect.com/science/article/pii/S0377042799001752`.

Amini:2003:MLF

[AP03] S. Amini and A. T. J. Profit. Multi-level fast multipole Galerkin method for the boundary integral solution of the exterior Helmholtz equation. In *Current trends in scientific computing (Xi'an, 2002)*, volume 329 of *Contemp. Math.*, pages 13–19. American Mathematical Society, Providence, RI, USA, 2003.

Aluru:1994:TDI

[APG94] S. Aluru, G. M. Prabhu, and J. Gustafson. Truly distribution-independent algorithms for the N-body problem. In IEEE [IEE94c], pages 420–428. ISBN 0-8186-6605-6 (paper), 0-8186-6606-4 (microfiche), 0-8186-6607-2 (case). ISSN 1063-9535. LCCN QA76.5 .S894 1994. URL `http://dogbert.ee.duke.edu/School/Reference/Multipole.html`; `http://sc94.ameslab.gov/AP/contents.html`. This paper proves that Greengard's algorithm is not $O(N)$ for non-uniform distributions.

Appel:1985:EPM

[App85] Andrew W. Appel. An efficient program for many-body simulation. *SIAM Journal on Scientific and Statistical Computing*, 6(1):85–103, January 1985. CODEN SIJCD4. ISSN 0196-5204.

Alpert:1991:FAE

[AR91] Bradley K. Alpert and Vladimir Rokhlin. A fast algorithm for the evaluation of Legendre expansions. *SIAM Journal on Scientific and Statistical Computing*, 12(1):158–179, January 1991. CODEN SIJCD4. ISSN 0196-5204. These polynomials are used in the Fast Multipole Method, and this paper shows how they can be computed in $O(N)$ time.

Allen:1987:CSL

[AT87] M. P. Allen and D. J. Tildesley. *Computer Simulation of*

Liquids. Clarendon Press, Oxford, UK, 1987. ISBN 0-19-855645-4. xix + 385 pp. LCCN QC145.2 .A431 1987.

Atkinson:1997:NSB

[Atk97] Kendall E. Atkinson. The numerical solution of boundary integral equations. In *The state of the art in numerical analysis (York, 1996)*, volume 63 of *Inst. Math. Appl. Conf. Ser. New Ser.*, pages 223–259. Oxford Univ. Press, New York, 1997.

Amisaki:2003:DHA

[ATMK03] Takashi Amisaki, Shinjiro Toyoda, Hiroh Miyagawa, and Kunihiro Kitamura. Development of hardware accelerator for molecular dynamics simulations: a computation board that calculates nonbonded interactions in cooperation with fast multipole method. *Journal of Computational Chemistry*, 24(5):582–592, April 15, 2003. CODEN JCCHDD. ISSN 0192-8651 (print), 1096-987X (electronic).

Araujo:2012:SLS

[ATR+12] M. G. Araujo, J. M. Taboada, J. Rivero, D. M. Solis, and F. Obelleiro. Solution of large-scale plasmonic problems with the multilevel fast multipole algorithm. *Optics Letters*, 37(3):416–418, February 1, 2012. CODEN OPLEDP. ISSN 1539-4794.

Andoh:2020:EFM

[AYO20] Yoshimichi Andoh, Noriyuki Yoshii, and Susumu Okazaki. Extension of the fast multipole method for the rectangular cells with an anisotropic partition tree structure. *Journal of Computational Chemistry*, 41(14):1353–1367, May 30, 2020. CODEN JCCHDD. ISSN 0192-8651 (print), 1096-987X (electronic).

Ying:1997:VM

[aYZ97] Lung an Ying and Ping-wen Zhang. *Vortex methods*, volume 381 of *Mathematics and its Applications*. Kluwer Academic Publishers Group, Norwell, MA, USA, and Dordrecht, The Netherlands, 1997. ISBN 0-7923-4276-3; 7-03-005756-2. x + 347 pp.

Bailey:1995:PSS

[B+95] David H. Bailey et al., editors. *Proceedings of the Seventh SIAM Conference on Parallel Processing for Scientific Computing (February 1995, San Francisco, CA)*. Society for Industrial and Applied Mathematics, Philadelphia, PA, USA, 1995. ISBN 0-89871-344-7. LCCN QA76.58.S55 1995.

Becciani:1997:PTC

[BAAD+97] U. Becciani, R. Ansaloni, V. Antonuccio-Delogu, G. Erbacci, M. Gambera, and A. Pagliaro. A parallel tree code for large N-body simulation: dynamic load balance and data distribution on a CRAY T3D system. *Computer Physics Communications*, 106(1–2): 105–113, October 2, 1997. CODEN CPHCBZ. ISSN 0010-4655 (print), 1879-2944 (electronic). URL `http://www.sciencedirect.com/science/article/pii/S0010465597001021`.

Becciani:2001:YRF

[BAD01] U. Becciani and V. Antonuccio-Delogu. Are you ready to FLY in the universe? A multi-platform N-body tree code for parallel supercomputers. *Computer Physics Communications*, 136(1–2):54–63, May 1, 2001. CODEN CPHCBZ. ISSN 0010-4655 (print), 1879-2944 (electronic). URL `http://www.sciencedirect.com/science/article/pii/S0010465500002538`.

Becciani:2000:MPT

[BADG00] U. Becciani, V. Antonuccio-Delogu, and M. Gambera. A modified parallel tree code for N-body simulation of the large-scale structure of the universe. *Journal of Computational Physics*, 163(1): 118–132, September 1, 2000. CODEN JCTPAH. ISSN 0021-9991 (print), 1090-2716 (electronic). URL `http://www.sciencedirect.com/science/article/pii/S0021999100965574`.

Becciani:1996:WDS

[BADP96] U. Becciani, V. Antonuccio-Delogu, and A. Pagliaro. A work- and data-sharing parallel tree N-body code. *Computer Physics Communications*, 99(1):9–20, December 1996. CODEN CPHCBZ. ISSN 0010-4655 (print), 1879-2944 (electronic).

Bagla:2002:TCC

[Bag02] J. S. Bagla. TreePM: a code for cosmological N-body simulations. *Journal of Astrophysics and Astronomy*, 23(3–4):185–196, December 2002. CODEN JASRD7. ISSN 0250-6335 (print), 0973-7758 (electronic). URL `http://www.springerlink.com/content/0250-6335`.

Belhadj:1991:MDS

[BAL91] M. Belhadj, Howard E. Alper, and Ronald M. Levy. Molecular dynamics simulations of water with Ewald summation for the long range electrostatic interactions. *Chemical Physics Letters*, 179(1–2):13–20, 1991. CODEN CHPLBC. ISSN 0009-2614 (print), 1873-4448 (electronic).

Barnes:1986:USS

[Bar86] Joshua E. Barnes. An efficient N-body algorithm for a fine-grain parallel computer. In Hut and McMillan [HM86], pages 175–180. ISBN 0-387-17196-7 (US). LCCN QB807 .U74 1986.

Barnes:1990:MTC

[Bar90] Joshua E. Barnes. A modified tree code: Don't laugh; it runs. *Journal of Computational Physics*, 87(1):161–170, March 1990. CODEN JCTPAH. ISSN 0021-9991 (print), 1090-2716 (electronic). URL http://www.sciencedirect.com/science/article/pii/002199919090232P.

Bathe:2003:CFS

[Bat03] K. J. Bathe, editor. *Computational fluid and solid mechanics 2003. Vol. 1*. Elsevier Science Ltd., Oxford, 2003. ISBN 0-08-044046-0.

Berger:1987:PSN

[BB87] Marsha Berger and Shahid Bokhari. A partitioning strategy for non-uniform problems on multiprocessors. *IEEE Transactions on Computers*, C-36(5):570–580, May 1987. CODEN ITCOB4. ISSN 0018-9340 (print), 1557-9956 (electronic). ICASE Report No. 85-55, Nov. 1985.

Becciani:2006:FMP

[BCAD06] U. Becciani, M. Comparato, and V. Antonuccio-Delogu. FLY MPI-2: a parallel tree code for LSS. *Computer Physics Communications*, 174(7):605–606, April 1, 2006. CODEN CPHCBZ. ISSN 0010-4655 (print), 1879-2944 (electronic). URL http://www.sciencedirect.com/science/article/pii/S0010465506000713.

Beale:1993:VFR

[BCH93] J. T. (John Thomas) Beale, G.-H. (Georges-Henri) Cottet, and S. (Serge) Huberson, editors. *Vortex flows and related numerical methods*, volume 395 of *NATO ASI series. Series C, Mathematical and physical sciences.* Kluwer Academic Publishers Group, Norwell, MA, USA, and Dordrecht, The Netherlands, 1993. ISBN 0-7923-2250-9. LCCN QA925 .V66 1993. Proceedings of the NATO Advanced Research Workshop on Vortex Flows and Related Numerical Methods, Grenoble, France, June 15-19, 1992.

Board:1992:AMD

[BCL+92] John A. Board, Jr., Jeffrey W. Causey, James F. Leathrum, Jr., Andreas Windemuth, and Klaus Schulten. Accelerated molecular-dynamics simulation with the parallel fast multipole algorithm. *Chemical Physics Letters*, 198(1):89–94, October 2, 1992. CODEN CHPLBC. ISSN 0009-2614 (print), 1873-4448 (electronic).

Babuska:2002:MMN

[BCM02] Ivo Babuška, Philippe G. Ciarlet, and Tetsuhiko Miyoshi, editors. *Mathematical modeling and numerical simulation in continuum mechanics*, volume 19 of *Lecture*

Notes in Computational Science and Engineering. Springer-Verlag, Berlin, Germany / Heidelberg, Germany / London, UK / etc., 2002. ISBN 3-540-42399-0.

Brown:1993:DDP

[BCOY93] David Brown, Julian H. R. Clarke, Motoi Okuda, and Takao Yamazaki. A domain decomposition parallelization strategy for molecular dynamics simulations on distributed memory machines. *Computer Physics Communications*, 74 (1):67–80, January 1993. CODEN CPHCBZ. ISSN 0010-4655 (print), 1879-2944 (electronic).

Brown:1994:DDP

[BCOY94] David Brown, Julian H. R. Clarke, Motoi Okuda, and Takao Yamazaki. A domain decomposition parallel processing algorithm for molecular dynamics simulations of polymers. *Computer Physics Communications*, 83 (1):1–13, October 1994. CODEN CPHCBZ. ISSN 0010-4655 (print), 1879-2944 (electronic).

Beylkin:2008:FAA

[BCP08] Gregory Beylkin, Vani Cheruvu, and Fernando Pérez. Fast adaptive algorithms in the non-standard form for multidimensional problems. *Applied and Computational Harmonic Analysis. Time-Frequency and Time-Scale Analysis, Wavelets, Numerical Algorithms, and Applications*, 24(3):354–377, 2008. ISSN 1063-5203 (print), 1096-603x (electronic).

Beatson:2001:FER

[BCR01] R. K. Beatson, J. B. Cherrie, and D. L. Ragozin. Fast evaluation of radial basis functions: methods for four-dimensional polyharmonic splines. *SIAM journal on mathematical analysis*, 32(6):1272–1310, 2001. CODEN SJMAAH. ISSN 0036-1410 (print), 1095-7154 (electronic).

Bachelot:2003:CFM

[BDMN03a] Alain Bachelot, Eric Darrigrand, and Katherine Mer-Nkonga. Coupling of a fast multipole method and a microlocal discretization for integral equations of electromagnetism. In *Mathematical and numerical aspects of wave propagation—WAVES 2003*, pages 669–674. Springer-Verlag, Berlin, Germany / Heidelberg, Germany / London, UK / etc., 2003.

Bachelot:2003:CMF

[BDMN03b] Alain Bachelot, Eric Darrigrand, and Katherine Mer-Nkonga. Coupling of a multilevel fast multipole method and a microlocal discretization for the 3-D integral equations of electromagnetism. *Comptes Rendus Mathématique. Académie* *des Sciences. Paris*, 336(6): 505–510, 2003. ISSN 1631-073x (print), 1778-3569 (electronic).

Bowers:2007:ZMP

[BDS07] Kevin J. Bowers, Ron O. Dror, and David E. Shaw. Zonal methods for the parallel execution of range-limited N-body simulations. *Journal of Computational Physics*, 221(1):303–329, January 20, 2007. CODEN JCTPAH. ISSN 0021-9991 (print), 1090-2716 (electronic). URL `http://www.sciencedirect.com/science/article/pii/S0021999106002919`.

Bebendorf:2006:AIP

[Beb06] Mario Bebendorf. Approximate inverse preconditioning of finite element discretizations of elliptic operators with nonsmooth coefficients. *SIAM Journal on Matrix Analysis and Applications*, 27(4):909–929, 2006. CODEN SJMAEL. ISSN 0895-4798 (print), 1095-7162 (electronic).

Brunet:1994:EHA

[BEM94] Jean-Philippe Brunet, Alan Edelman, and Jill P. Mesirov. Erratum: "Hypercube algorithms for direct N-body solvers for different granularities" [SIAM J. Sci. Comput. **14** (1993), no. 5, 1143–1158, MR 94e:70002]. *SIAM Journal on Scientific Computing*, 15(1):238, January 1994. CODEN SJOCE3. ISSN 1064-8275 (print), 1095-7197 (electronic). See [BME93].

Berman:1995:GMC

[Ber95] C. Leonard Berman. Grid–multipole calculations. *SIAM Journal on Scientific Computing*, 16(5):1082–1091, September 1995. CODEN SJOCE3. ISSN 1064-8275 (print), 1095-7197 (electronic).

Bespalov:2000:URG

[Bes00] A. N. Bespalov. On the use of a regular grid for implementation of boundary integral methods for wave problems. *Russian journal of numerical analysis and mathematical modelling*, 15(6):469–488, 2000. CODEN RJNMEH. ISSN 0927-6467 (print), 1569-3988 (electronic).

Bentley:1978:FAC

[BF78] Jon Louis Bentley and Jerome H. Friedman. Fast algorithms for constructing minimal spanning trees in coordinate spaces. *IEEE Transactions on Computers*, C-27(2):97–105, 1978. CODEN ITCOB4. ISSN 0018-9340 (print), 1557-9956 (electronic).

Boschitsch:1999:FAM

[BFO99] Alexander H. Boschitsch, Marcia O. Fenley, and Wilma K. Olson. A fast adaptive multipole algorithm for calculating screened Coulomb (Yukawa) interactions. *Journal of Computational Physics*, 151(1):212–241, May 1, 1999. CODEN JCTPAH. ISSN 0021-9991 (print), 1090-2716 (electronic). URL http://www.sciencedirect.com/science/article/pii/S0021999198961769.

Berman:1994:RME

[BG94] C. Leonard Berman and Leslie Greengard. A renormalization method for the evaluation of lattice sums. *Journal of Mathematical Physics*, 35(11):6036–6048, November 1994. CODEN JMAPAQ. ISSN 0022-2488 (print), 1089-7658 (electronic), 1527-2427.

Beatson:1997:SCF

[BG97] Rick Beatson and Leslie Greengard. A short course on fast multipole methods. In Ainsworth et al. [A+97], pages 1–37. ISBN 0-19-850190-0. LCCN QA374 .W38 1997. The Seventh EPSRC Numerical Analysis Summer School was held at the University of Leicester during the summer of 1996, from the 8th to the 19th of July.

Bunse-Gerstner:2006:PGC

[BGGC06] Angelika Bunse-Gerstner and Ignacio Gutiérrez-Cañas. A preconditioned GMRES for complex dense linear systems from electromagnetic wave scattering problems. *Linear Algebra and its Applications*, 416(1):135–147, 2006. CODEN LAAPAW. ISSN 0024-3795 (print), 1873-1856 (electronic).

Bakker:1990:SPC

[BGGT90] A. F. Bakker, G. H. Gilmer, M. H. Grabow, and K. Thompson. A special purpose computer for molecular dynamics calculations. *Journal of Computational Physics*, 90(2):313–335, October 1990. CODEN JCTPAH. ISSN 0021-9991 (print), 1090-2716 (electronic). URL http://www.sciencedirect.com/science/article/pii/0021999190901692.

Baldini:1999:HPC

[BGI+99] S. Baldini, L. Giraud, J. G. Izaguirre, J. M. Jimenez, and L. M. Matey. High performance computing in multibody system design. *The International Journal of High Performance Computing Applications*, 13(2):99–??, Summer 1999. CODEN IHPCFL. ISSN 1094-3420 (print), 1741-2846 (electronic).

Bischof:2005:DPC

[BGLM05] Holger Bischof, Sergei Gorlatch, Roman Leshchinskiy, and Jens Müller. Data parallelism in C++ template programs: a Barnes–Hut case study. *Parallel Processing Letters*, 15(3):257–272, September 2005. CODEN PPLTEE. ISSN 0129-6264 (print), 1793-642X (electronic).

Broeckx:2000:PIC

[BGPW00] F. Broeckx, M. J. Goovaerts, R. Piessens, and L. Wuytack, editors. *Proceedings of the 8th International Congress on Computational and Applied Mathematics, ICCAM-98*. Elsevier Science B.V., Amsterdam, 2000. CODEN JCAMDI. ISSN 0377-0427 (print), 1879-1778 (electronic). Held at the University of Leuven, Leuven, July 27–August 1, 1998, J. Comput. Appl. Math. **115** (2000), no. 1-2.

Barnes:1986:HFC

[BH86] Josh E. Barnes and Piet Hut. A hierarchical $O(N \log N)$ force-calculation algorithm. *Nature*, 324(6270):446–449, December 4, 1986. CODEN NATUAS. ISSN 0028-0836 (print), 1476-4687 (electronic). This paper appears to be the origin of fast multipole algorithms; its $O(N \log N)$ complexity was later improved to $O(N)$ [GR87]. See also [App85], which might predate this work.

Bouchet:1988:CSU

[BH88] François R. Bouchet and Lars Hernquist. Cosmological simulations using the hierarchical tree method. *Astrophysical Journal. Supplement Series*, 68(4):521–538, 1988. CODEN APJSA2. ISSN 0067-0049 (print), 1538-4365 (electronic).

Barnes:1989:EAT

[BH89] Joshua E. Barnes and Piet Hut. Error analysis of a tree code. *Astrophysical Journal. Supplement Series*, 70(2):389–417, 1989. CODEN APJSA2. ISSN 0067-0049 (print), 1538-4365 (electronic).

Bordner:2003:BES

[BH03] A. J. Bordner and G. A. Huber. Boundary element solution of the linear Poisson–Boltzmann equation and a multipole method for the rapid calculation of forces on macromolecules in solution. *Journal of Computational Chemistry*, 24(3):353–367, February 2003. CODEN JCCHDD. ISSN 0192-8651 (print), 1096-987X (electronic).

Bhatt:1997:PAT

[Bha97] Sandeep N. Bhatt, editor. *Parallel Algorithms: third DIMACS implementation challenge*, volume 30 of *DIMACS Series in Discrete Mathematics and Theoretical Computer Science*. American Mathematical Society, Providence, RI, USA, 1997. ISBN 0-8218-0447-2. LCCN QA76.642 .P36 1997.

Board:1994:SIM

[BHE+94] John A. Board, Jr., Ziyad S. Hakura, William D. Elliott, Daniel C. Gray, William J. Blanke, and James F. Leathrum, Jr. Scalable implementations of multipole-accelerated algorithms for molecular dynamics. In IEEE [IEE94b], pages 95–102. ISBN 0-8186-5680-8 (paper), 0-8186-5681-6 (microfiche). LCCN QA76.58 .S32 1994. IEEE catalog number 94TH0637-9.

Board:1994:SVM

[BHER94] John A. Board, Jr., Ziyad S. Hakura, William D. Elliott, and Willim T. Rankin. Scalable variants of multipole-accelerated algorithms for molecular dynamics applications. Technical Report TR 94-006, Duke University, Durham, NC, USA, ???? 1994.

Buchau:2004:FMB

[BHGR04] A. Buchau, W. Hafla, F. Groh, and W. M. Rucker. Fast multipole boundary element method for the solution of 3D electrostatic field problems. In *Boundary elements XXVI*, volume 19 of *Int. Ser. Adv. Bound. Elem.*, pages 369–379. WIT Press, Southampton, 2004.

Buchau:2005:FMM

[BHGR05] André Buchau, Wolfgang Hafla, Friedemann Groh, and Wolfgang M. Rucker. Fast multipole method based solution of electrostatic and magnetostatic field problems. *Computing and Visualization in Science*, 8(3-4):137–144, 2005. ISSN 1432-9360 (print), 1433-0369 (electronic).

Boehncke:1990:MDS

[BHGS90] K. Boehncke, Helmut Heller, H. Grubmuller, and Klaus Schulten. Molecular dynamics simulations on a systolic ring of transputers. In *NATUG-3. Proceedings of the Third North American Transputers Users Group*, pages 83–94. ????, ????, 1990.

Buchau:2004:FEB

[BHR04] André Buchau, Wolfgang Hafla, and Wolfgang M. Rucker. Fast and efficient 3D boundary element method for closed domains. *COMPEL*, 23 (4):859–865, 2004. ISSN 0332-1649.

Bhanot:1996:HDP

[BJWS96] B. Bhanot, J. Janak, R. Walkup, and V. Sonnad. Hierarchical decomposition: A parallel implementation of the Barnes–Hut tree algorithm. *International Journal of High Speed Computing*, 8(1):1–12, ???? 1996. CODEN IHSCEZ. ISSN 0129-0533.

Burkholder:1996:HFA

[BK96] Robert J. Burkholder and Do-Hoon Kwon. High-frequency asymptotic acceleration of the fast multipole method. *Radio Science*, 31(5):1199–??, ???? 1996. CODEN RASCAD. ISSN 0048-6604 (print), 1944-799x (electronic). Paper 96RS01785.

Beckmann:2015:PNL

[BK15] Andreas Beckmann and Ivo Kabadshow. Portable node-level performance optimization for the fast multipole method. In Mehl et al. [MBS15], pages 29–46. ISBN 3-319-22996-6, 3-319-22997-4 (e-book). LCCN QA71-90; TA329. URL `http://link.springer.com/chapter/10.1007/978-3-319-22997-3_2/`.

Beylkin:2009:FCF

[BKM09] Gregory Beylkin, Christopher Kurcz, and Lucas Monzón. Fast convolution with the free space Helmholtz Green's function. *Journal of Computational Physics*, 228(8):2770–2791, 2009. CODEN JCTPAH. ISSN 0021-9991 (print), 1090-2716 (electronic).

Beatson:1997:FER

[BL97] R. K. Beatson and W. A. Light. Fast evaluation of radial basis functions: methods for two-dimensional polyharmonic splines. *IMA Journal of Numerical Analysis*, 17(3):343–372, 1997. CODEN IJNADH. ISSN 0272-4979 (print), 1464-3642 (electronic).

Bokanowski:1998:FMM

[BL98] Oliver Bokanowski and Mohammed Lemou. Fast multipole method for multidimensional integrals. *Comptes Rendus des Séances de l'Académie des Sciences. Série I. Mathématique*, 326(1):105–110, 1998. CODEN CASMEI. ISSN 0764-4442 (print), 1778-3577 (electronic).

Bokanowski:2005:FMM

[BL05] Olivier Bokanowski and Mohammed Lemou. Fast multipole method for multivariable integrals. *SIAM Journal on Numerical Analysis*, 42(5):2098–2117, October 2005. CODEN SJNAAM. ISSN 0036-1429 (print), 1095-7170 (electronic). URL `http://epubs.siam.org/sam-bin/dbq/article/40969`.

Barba:2005:AVV

[BLA05] L. A. Barba, A. Leonard, and C. B. Allen. Advances in viscous vortex methods—meshless spatial adaption based on radial basis function interpolation. *International Journal for Numerical Methods in Fluids*, 47(5):387–421, 2005. CODEN IJNFDW. ISSN 0271-2091 (print), 1097-0363 (electronic).

Brunet:1990:OHD

[BME90] J.-P. Brunet, J. P. Mesirov, and A. Edelman. An optimal hypercube direct N-body solver on the Connection Machine. In IEEE [IEE90], pages 748–752. ISBN 0-8186-2056-0 (paperback) (IEEE Computer Society), 0-89791-412-0 (paperback) (ACM). LCCN

QA 76.88 S87 1990. ACM order number 415903. IEEE Computer Society Press order number 2056. IEEE catalog number 90CH2916-5.

Brunet:1993:HAD

[BME93] Jean-Philippe Brunet, Jill P. Mesirov, and Alan Edelman. Hypercube algorithms for direct N-body solvers for different granularities. *SIAM Journal on Scientific Computing*, 14(5):1143–1158, September 1993. CODEN SJOCE3. ISSN 1064-8275 (print), 1095-7197 (electronic). See erratum [BEM94].

Blelloch:1997:PCB

[BN97] Guy Blelloch and Girija Narlikar. A practical comparison of N-body algorithms. In Bhatt [Bha97], pages 81–96. ISBN 0-8218-0447-2. LCCN QA76.642 .P36 1997. URL http://www.cs.cmu.edu/afs/cs.cmu.edu/project/scandal/public/papers/dimacs-nbody.html; http://www.cs.cmu.edu/afs/cs.cmu.edu/project/scandal/public/papers/dimacs-nbody.pdf; http://www.cs.cmu.edu/afs/cs.cmu.edu/project/scandal/public/papers/dimacs-nbody.ps.gz.

Beatson:1998:FER

[BN98] R. K. Beatson and G. N. Newsam. Fast evaluation of radial basis functions: moment-based methods. *SIAM Journal on Scientific Computing*, 19(5):1428–1449, 1998. CODEN SJOCE3. ISSN 1064-8275 (print), 1095-7197 (electronic).

Bonnet:2007:FBT

[BN07] Marc Bonnet and Nicolas Nemitz. FM-BEM and topological derivative applied to acoustic inverse scattering. In *Boundary element analysis*, volume 29 of *Lect. Notes Appl. Comput. Mech.*, pages 187–212. Springer, Berlin, 2007.

Boris:1986:VNN

[Bor86] Jay Boris. A vectorized 'near neighbors' algorithm of order N using a monotonic logical grid. *Journal of Computational Physics*, 66(1):1–20, September 1986. CODEN JCTPAH. ISSN 0021-9991 (print), 1090-2716 (electronic). URL http://www.sciencedirect.com/science/article/pii/0021999186900501.

Borm:2023:DHM

[Bör23] Steffen Börm. Distributed $\mathcal{H}_2$-matrices for boundary element methods. *ACM Transactions on Mathematical Software*, 49(2):14:1–14:??, June 2023. CODEN ACMSCU. ISSN 0098-3500 (print), 1557-7295 (electronic). URL https://dl.acm.org/doi/10.1145/3582494.

Bode:2000:TPM

[BOX00] P. Bode, J. P. Ostriker, and G. Xu. The tree particle-mesh N-body gravity solver. *Astrophysical Journal. Supplement Series*, 128(??):561–569, June 2000. CODEN APJSA2. ISSN 0067-0049 (print), 1538-4365 (electronic).

Boyd:1992:FACb

[Boy92a] John P. Boyd. A fast algorithms for Chebyshev, Fourier and sinc interpolation onto an irregular grid. *Journal of Computational Physics*, 103 (2):243–257, December 1992. CODEN JCTPAH. ISSN 0021-9991 (print), 1090-2716 (electronic). URL http://www.sciencedirect.com/science/article/pii/002199919290399J.

Boyd:1992:MEP

[Boy92b] John P. Boyd. Multipole expansions and pseudospectral cardinal functions: A new generalization of the Fast Fourier Transform. *Journal of Computational Physics*, 103 (1):184–186, November 1992. CODEN JCTPAH. ISSN 0021-9991 (print), 1090-2716 (electronic). URL http://www.sciencedirect.com/science/article/pii/002199919290333T.

Boyer:1988:MDC

[BP88] L. L. Boyer and G. S. Pawley. Molecular dynamics of clusters of particles interacting with pairwise forces using a massively parallel computer. *Journal of Computational Physics*, 78(2):405–423, October 1988. CODEN JCTPAH. ISSN 0021-9991 (print), 1090-2716 (electronic). URL http://www.sciencedirect.com/science/article/pii/0021999188900575.

Buchholtz:1993:VAM

[BP93] Volkhard Buchholtz and Thorsten Poschel. A vectorized algorithm for molecular-dynamics of short-range interacting particles. *International Journal of Modern Physics C [Physics and Computers]*, 4:1049–1057, October 1993. CODEN IJMPEO. ISSN 0129-1831 (print), 1793-6586 (electronic).

Bohme:2003:FAF

[BP03] Martin Böhme and Daniel Potts. A fast algorithm for filtering and wavelet decomposition on the sphere. *Electronic Transactions on Numerical Analysis*, 16:70–92, 2003. ISSN 1068-9613 (print), 1097-4067 (electronic).

Brooks:1985:SEE

[BPK85] Charles L. Brooks, III, B. Montgomery Pettitt, and Martin Karplus. Structural and energetic effects of truncating long ranged interactions in ionic and polar fluids. *Journal of Chemical Physics*, 83(11):5897–5908, 1985. CODEN JCPSA6. ISSN 0021-

9606 (print), 1089-7690 (electronic).

Beatson:2007:FEP

[BPT07] R. K. Beatson, M. J. D. Powell, and A. M. Tan. Fast evaluation of polyharmonic splines in three dimensions. *IMA Journal of Numerical Analysis*, 27(3):427–450, 2007. CODEN IJNADH. ISSN 0272-4979 (print), 1464-3642 (electronic).

Benson:2014:PDF

[BPT+14] Austin R. Benson, Jack Poulson, Kenneth Tran, Björn Engquist, and Lexing Ying. A parallel directional fast multipole method. *SIAM Journal on Scientific Computing*, 36(4):C335–C352, ???? 2014. CODEN SJOCE3. ISSN 1064-8275 (print), 1095-7197 (electronic).

Brebbia:1993:BEX

[BR93] C. A. Brebbia and J. J. Rencis, editors. *Boundary elements XV: International Conference on Boundary Element Methods (15th: 1993: Worcester Polytechnic Institute)*, volume 15. Computational Mechanics Publications; Elsevier, London; New York, 1993. ISBN 1-85166-842-X, 1-85312-273-4, 1-56252-197-7. LCCN TA347.B69 I565 1993.

Brebbia:2004:BEX

[Bre04] C. A. Brebbia, editor. *Boundary elements XXVI*, volume 19 of *International Series on Advances in Boundary Elements*. WIT Press, Southampton, 2004. ISBN 1-85312-708-6. xvi + 466 pp. Papers from the 26th World Conference on Boundary Elements and other Mesh Reduction Methods held in Bologna, April 19–21, 2004.

Biesiadecki:1993:DMT

[BS93] Jeffrey J. Biesiadecki and Robert D. Skeel. Dangers of multiple time step methods. *Journal of Computational Physics*, 109(2): 318–328, December 1993. CODEN JCTPAH. ISSN 0021-9991 (print), 1090-2716 (electronic). URL `http://www.sciencedirect.com/science/article/pii/S0021999183712209`.

Blackston:1997:HPE

[BS97] David Blackston and Torsten Suel. Highly portable and efficient implementations of parallel adaptive N-body methods. In ACM [ACM97], pages 1–20. ISBN 0-89791-985-8. LCCN ???? URL `http://www.supercomp.org/sc97/proceedings/TECH/BLACKSTO/INDEX.HTM`. ACM SIGARCH order number 415972. IEEE Computer Society Press order number RS00160.

Board:2000:FMA

[BS00] John Board and Klaus Schulten. The fast multipole algorithm. *Computing in Science and Engineering*, 2 (1):76–79, January/February 2000. CODEN CSENFA. ISSN 1521-9615 (print), 1558-366X (electronic). URL `http://dlib.computer.org/cs/books/cs2000/pdf/c1076.pdf`; `http://www.computer.org/cse/cs1999/c1076abs.htm`. See correspondence [MBS+00].

Becker:2019:DFT

[BS19] Martin Becker and Marek Sierka. Density functional theory for molecular and periodic systems using density fitting and continuous fast multipole method: Stress tensor. *Journal of Computational Chemistry*, 40(29):2563–2570, November 5, 2019. CODEN JCCHDD. ISSN 0192-8651 (print), 1096-987X (electronic).

Bapat:2009:AFM

[BSL09] M. S. Bapat, L. Shen, and Y. J. Liu. Adaptive fast multipole boundary element method for three-dimensional half-space acoustic wave problems. *Engineering Analysis with Boundary Elements*, 33 (8-9):1113–1123, 2009. ISSN 0955-7997 (print), 1873-197x (electronic).

Bannerman:2011:DFG

[BSL11] M. N. Bannerman, R. Sargant, and L. Lue. DynamO: a free $O(N)$ general event-driven molecular dynamics simulator. *Journal of Computational Chemistry*, 32(15):3329–3338, November 30, 2011. CODEN JCCHDD. ISSN 0192-8651 (print), 1096-987X (electronic).

Bishop:1997:DMT

[BSS97] Thomas C. Bishop, Robert D. Skeel, and Klaus Schulten. Difficulties with multiple time stepping and fast multipole algorithm in molecular dynamics. *Journal of Computational Chemistry*, 18(14):1785–1791, November 15, 1997. CODEN JCCHDD. ISSN 0192-8651 (print), 1096-987X (electronic).

Burant:1996:AEG

[BSSF96a] J. C. Burant, M. C. Strain, G. E. Scuseria, and M. J. Frisch. Analytic energy gradients for the Gaussian very fast multipole method (GvFMM). *Chemical Physics Letters*, 248 (1–2):43–49, January 5, 1996. CODEN CHPLBC. ISSN 0009-2614 (print), 1873-4448 (electronic).

Burant:1996:KSA

[BSSF96b] J. C. Burant, M. C. Strain, G. E. Scuseria, and M. J. Frisch. Kohn–Sham analytic energy second derivatives with the Gaussian very fast multipole method (GvFMM). *Chemical Physics Letters*, 258 (1–2):45–52, August 9, 1996. CODEN CHPLBC. ISSN 0009-2614 (print), 1873-4448 (electronic).

Bang:2023:AFM

[BSSJ23] Seungbae Bang, Kirill Serkh, Oded Stein, and Alec Jacobson. An adaptive fast-multipole-accelerated hybrid boundary integral equation method for accurate diffusion curves. *ACM Transactions on Graphics*, 42(6): 215:1–215:??, December 2023. CODEN ATGRDF. ISSN 0730-0301 (print), 1557-7368 (electronic). URL `https://dl.acm.org/doi/10.1145/3618374`.

Barnett:1994:ICC

[BSvdG+94] Mike Barnett, Lance Shuler, Robert van de Geijn, Satya Gupta, David G. Payne, and Jerrell Watts. Interprocessor collective communication library (intercom). In *Proceedings of the Scalable High-Performance Computing Conference*, pages 357–364. ????, ????, 1994.

Bandi:1995:ASS

[BT95] S. Bandi and D. Thalmann. An adaptive spatial subdivision of the object space for fast collision detection of animated rigid bodies. *Computer Graphics Forum*, 14 (3):C/259–C/270, September 1995. CODEN CGFODY. ISSN 0167-7055 (print), 1467-8659 (electronic).

Banjai:2003:MMS

[BT03] Lehel Banjai and L. N. Trefethen. A multipole method for Schwarz–Christoffel mapping of polygons with thousands of sides. *SIAM Journal on Scientific Computing*, 25(3):1042–1065, May 2003. CODEN SJOCE3. ISSN 1064-8275 (print), 1095-7197 (electronic). URL `http://epubs.siam.org/sam-bin/dbq/article/41167`.

Buhmann:2003:RBF

[Buh03] M. D. Buhmann. *Radial basis functions: theory and implementations*, volume 12 of *Cambridge Monographs on Applied and Computational Mathematics*. Cambridge University Press, Cambridge, UK, 2003. ISBN 0-521-63338-9. x + 259 pp.

Bindiganavale:1996:GUFb

[BV96a] S. S. Bindiganavale and J. L. Volakis. Guidelines for using the fast multipole method to calculate the RCS for large objects. *Microwave and Optical Technology Letters*, 11(4): 190–??, ???? 1996. CODEN MOTLEO. ISSN 0895-2477 (print), 1098-2760 (electronic).

Bindiganavale:1996:GUFa

[BV96b] S. S. Bindiganavale and J. L. Volakis. Guidelines for using the fast multipole method to calculate the RCS of large objects. In Anonymous [Ano96], pages 596–603. Two volumes.

Bindiganavale:1996:DNR

[BVW96] S. S. Bindiganavale, J. L. Volakis, and H. Wang. Dielectric nose radome scattering by using the fast multipole method to calculate the RCS of large objects. In IEEE [IEE96a], pages 930–933. ISBN 0-7803-3217-2 (casebound), 0-7803-3216-4 (softbound), 0-7803-3218-0 (microfiche). LCCN TK7871.6.A68 1996. Three volumes.

Bharadwaj:1995:FMB

[BWS+95] Ranganathan Bharadwaj, Andreas Windemuth, S. Sridharan, Barry Honig, and Anthony Nicholls. The fast multipole boundary element method for molecular electrostatics: an optimal approach for large systems. *Journal of Computational Chemistry*, 16 (7):898–913, July 1995. CODEN JCCHDD. ISSN 0192-8651 (print), 1096-987X (electronic).

Chadwick:2009:HSP

[CAJ09] Jeffrey N. Chadwick, Steven S. An, and Doug L. James. Harmonic shells: a practical nonlinear sound model for near-rigid thin shells. *ACM Transactions on Graphics*, 28(5): 119:1–119:10, December 2009. CODEN ATGRDF. ISSN 0730-0301 (print), 1557-7368 (electronic).

Carpentieri:2006:MFT

[Car06] B. Carpentieri. A matrix-free two-grid preconditioner for solving boundary integral equations in electromagnetism. *Computing: Archiv für informatik und numerik*, 77(3):275–296, 2006. CODEN CMPTA2. ISSN 0010-485X (print), 1436-5057 (electronic).

Carpentieri:2007:PAP

[Car07] B. Carpentieri. Performance analysis of parallel Krylov methods for solving boundary integral equations in electromagnetism. *Communications in Numerical Methods in Engineering*, 23(7):691–701, 2007. CODEN CANMER. ISSN 1069-8299 (print), 1099-0887 (electronic).

Carpentieri:2009:APF

[Car09] Bruno Carpentieri. Algebraic preconditioners for the fast multipole method in electromagnetic scattering analysis from large structures: trends and problems. *Electronic Journal of Boundary Elements*, 7(1):13–49, 2009. ISSN 1542-3891.

Cruz:2009:CAF

[CB09] Felipe A. Cruz and L. A. Barba. Characterization of the accuracy of the fast multipole method in particle simulations. *International Journal for Numerical Methods in Engineering*, 79(13):1577–1604, 2009. CODEN IJNMBH. ISSN 0029-5981 (print), 1097-0207 (electronic).

Chaillat:2014:NFM

[CB14] Stéphanie Chaillat and Marc Bonnet. A new Fast Multipole formulation for the elastodynamic half-space Green's tensor. *Journal of Computational Physics*, 258(??): 787–808, February 1, 2014. CODEN JCTPAH. ISSN 0021-9991 (print), 1090-2716 (electronic). URL `http://www.sciencedirect.com/science/article/pii/S0021999113007602`.

Coles:2020:OSA

[CB20] Jonathan P. Coles and Rebekka Bieri. An optimizing symbolic algebra approach for generating fast multipole method operators. *Computer Physics Communications*, 251 (??):Article 107081, June 2020. CODEN CPHCBZ. ISSN 0010-4655 (print), 1879-2944 (electronic). URL `http://www.sciencedirect.com/science/article/pii/S0010465519303960`.

Cherrie:2002:FER

[CBN02] J. B. Cherrie, R. K. Beatson, and G. N. Newsam. Fast evaluation of radial basis functions: methods for generalized multiquadrics in $\mathbf{R^n}$. *SIAM Journal on Scientific Computing*, 23(5):1549–1571, 2002. CODEN SJOCE3. ISSN 1064-8275 (print), 1095-7197 (electronic).

Carayol:2004:EEF

[CC04] Quentin Carayol and Francis Collino. Error estimates in the fast multipole method for scattering problems. I. Truncation of the Jacobi–Anger series. *Mathematical modelling and numerical analysis = Modelisation mathématique et analyse numérique: M^2AN*, 38(2):371–394, 2004. CODEN RMMAEV. ISSN 0764-583X (print), 1290-3841 (electronic).

Carayol:2005:EEF

[CC05] Quentin Carayol and Francis Collino. Error estimates in the fast multipole method for scattering problems. II. Truncation of the Gegenbauer series. *Mathematical modelling and numerical analysis = Modelisation mathématique et analyse numérique: M^2AN*, 39(1):183–221, 2005. CODEN RMMAEV. ISSN 0764-583X (print), 1290-3841 (electronic).

Cho:2010:WFM

[CC10] Min Hyung Cho and Wei Cai. A Wideband Fast Multipole Method for the two-dimensional complex Helmholtz equation. *Computer Physics Communications*, 181(12): 2086–2090, December 2010. CODEN CPHCBZ. ISSN 0010-4655 (print), 1879-2944 (electronic). URL http://www.sciencedirect.com/science/article/pii/S0010465510003553.

Cho:2012:RWW

[CC12] Min Hyung Cho and Wei Cai. Revision of wFMM — a Wideband Fast Multipole Method for the two-dimensional complex Helmholtz equation. *Computer Physics Communications*, 183(2):446–447, February 2012. CODEN CPHCBZ. ISSN 0010-4655 (print), 1879-2944 (electronic). URL http://www.sciencedirect.com/science/article/pii/S0010465511003420.

Chen:2013:APM

[CC13] G. Chen and L. Chacón. An analytical particle mover for the charge- and energy-conserving, nonlinearly implicit, electrostatic particle-in-cell algorithm. *Journal of Computational Physics*, 247 (??):79–87, August 15, 2013. CODEN JCTPAH. ISSN 0021-9991 (print), 1090-2716 (electronic). URL http://www.sciencedirect.com/science/article/pii/S0021999113002507.

Chaillat:2015:WFM

[CC15] Stéphanie Chaillat and Francis Collino. A wideband fast multipole method for the Helmholtz kernel: Theoretical developments. *Computers and Mathematics with Applications*, 70(4):660–678, August 2015. CODEN CMAPDK. ISSN 0898-1221 (print), 1873-7668 (electronic). URL http://www.sciencedirect.com/science/article/pii/S0898122115002424.

Chollet:2023:DEI

[CCFG23] Igor Chollet, Xavier Claeys, Pierre Fortin, and Laura Grigori. A directional equispaced interpolation-based fast multipole method for oscillatory kernels. *SIAM Journal on Scientific Computing*, 45(1):C20–C48, ???? 2023. CODEN SJOCE3. ISSN 1064-8275 (print), 1095-7197 (electronic). URL https://epubs.siam.org/doi//doi/10.1137/22M1472930.

Cheng:2006:RIW

[CCG+06a] H. Cheng, W. Crutchfield, Z. Gimbutas, L. Greengard, J. Huang, V. Rokhlin, N. Yarvin, and J. Zhao. Remarks on the implementation of the wideband FMM for the Helmholtz equation in two dimensions. In *Inverse problems, multi-scale analysis and effective medium theory*, volume 408 of *Contemp. Math.*, pages 99–110. Amer. Math. Soc., Providence, RI, 2006.

Cheng:2006:WFM

[CCG+06b] Hongwei Cheng, William Y.

Crutchfield, Zydrunas Gimbutas, Leslie F. Greengard, J. Frank Ethridge, Jingfang Huang, Vladimir Rokhlin, Norman Yarvin, and Junsheng Zhao. A wideband fast multipole method for the Helmholtz equation in three dimensions. *Journal of Computational Physics*, 216(1): 300–325, 2006. CODEN JCTPAH. ISSN 0021-9991 (print), 1090-2716 (electronic).

Chen:2009:ADI

[CCKL09] K. H. Chen, J. T. Chen, J. H. Kao, and Y. T. Lee. Applications of the dual integral formulation in conjunction with fast multipole method to the oblique incident wave problem. *International Journal for Numerical Methods in Fluids*, 59(7):711–751, 2009. CODEN IJNFDW. ISSN 0271-2091 (print), 1097-0363 (electronic).

Chen:1997:FMM

[CCZ97] Y. H. Chen, W. C. Chew, and S. Zeroug. Fast multipole method as an efficient solver for 2D elastic wave surface integral equations. *Computational mechanics*, 20(6): 495–??, ???? 1997. CODEN CMMEEE. ISSN 0178-7675 (print), 1432-0924 (electronic).

Cecka:2013:FBF

[CD13] Cris Cecka and Eric Darve. Fourier-based Fast Multipole Method for the Helmholtz equation. *SIAM Journal on Scientific Computing*, 35(1): A79–A103, ???? 2013. CODEN SJOCE3. ISSN 1064-8275 (print), 1095-7197 (electronic).

Crowley:1997:AIS

[CDCD97] Michael F. Crowley, Tom A. Darden, Thomas E. Cheatham, III, and David W. Deerfield, II. Adventures in improving the scaling and accuracy of a parallel molecular dynamics program. *The Journal of Supercomputing*, 11(3): 255–278, November 1997. CODEN JOSUED. ISSN 0920-8542 (print), 1573-0484 (electronic). URL `http://www.wkap.nl/oasis.htm/144238`.

Chartier:2010:RFM

[CDF10] P. Chartier, E. Darrigrand, and E. Faou. A regular fast multipole method for geometric numerical integrations of Hamiltonian systems. *BIT Numerical Mathematics*, 50(1):23–40, March 2010. CODEN BITTEL, NBITAB. ISSN 0006-3835 (print), 1572-9125 (electronic). URL `http://www.springerlink.com/openurl.asp?genre=article&issn=0006-3835&volume=50&issue=1&spage=23`.

Carpentieri:2003:CFM

[CDGS03] B. Carpentieri, I. S. Duff, L. Giraud, and G. Sylvand. Combining fast multipole techniques and an approximate inverse preconditioner for large electromagnetism calculations. Report RAL-TR-2003-024 and TR/PA/03/77, Rutherford Appleton Laboratory and CERFACS, Chilton, Oxon, England and Toulouse, France, ???? 2003. URL http://epubs.cclrc.ac.uk/bitstream/316/raltr-2003024.pdf. To appear in SIAM J. Sci. Comput.

Carpentieri:2005:CFM

[CDGS05] B. Carpentieri, I. S. Duff, L. Giraud, and G. Sylvand. Combining fast multipole techniques and an approximate inverse preconditioner for large electromagnetism calculations. *SIAM Journal on Scientific Computing*, 27(3):774–792, May 2005. CODEN SJOCE3. ISSN 1064-8275 (print), 1095-7197 (electronic). URL http://epubs.siam.org/sam-bin/dbq/article/60391.

Cai:2007:EFM

[CDJ07] Wei Cai, Shaozhong Deng, and Donald Jacobs. Extending the fast multipole method to charges inside or outside a dielectric sphere. *Journal of Computational Physics*, 223(2):846–864, 2007. CODEN JCTPAH. ISSN 0021-9991 (print), 1090-2716 (electronic).

Capuzzo-Dolcetta:1998:CBF

[CDM98] R. Capuzzo-Dolcetta and P. Miocchi. A comparison between the fast multipole algorithm and the tree-code to evaluate gravitational forces in 3-D. *Journal of Computational Physics*, 143 (1):29–48, June 10, 1998. CODEN JCTPAH. ISSN 0021-9991 (print), 1090-2716 (electronic). URL http://www.sciencedirect.com/science/article/pii/S0021999198959496.

Cichocki:1989:EIP

[CFH89] B. Cichocki, B. U. Felderhof, and K. Hinsen. Electrostatic interactions in periodic Coulomb and dipolar systems. *Physical Review A (Atomic, Molecular, and Optical Physics)*, 39(10): 5350–5358, 1989. CODEN PLRAAN. ISSN 1050-2947 (print), 1094-1622, 1538-4446, 1538-4519.

Coulaud:2008:HPB

[CFR08] O. Coulaud, P. Fortin, and J. Roman. High performance BLAS formulation of the multipole-to-local operator in the fast multipole method. *Journal of Computational Physics*, 227(3):1836–1862, 2008. CODEN JCTPAH. ISSN 0021-9991 (print), 1090-2716 (electronic).

Coulaud:2010:HPB

[CFR10] O. Coulaud, P. Fortin, and J. Roman. High performance BLAS formulation of the adaptive Fast Multipole Method. *Mathematical and computer modelling*, 51(3-4):177–188, 2010. CODEN MCMOEG. ISSN 0895-7177 (print), 1872-9479 (electronic).

Cheng:1997:NEE

[CG97] Hongwei Cheng and Leslie Greengard. On the numerical evaluation of electrostatic fields in dense random dispersions of cylinders. *Journal of Computational Physics*, 136(2):629–639, 1997. CODEN JCTPAH. ISSN 0021-9991 (print), 1090-2716 (electronic).

Chandrasekaran:2004:DCA

[CG04] S. Chandrasekaran and M. Gu. A divide-and-conquer algorithm for the eigendecomposition of symmetric block-diagonal plus semiseparable matrices. *Numerische Mathematik*, 96(4):723–731, 2004. CODEN NUMMA7. ISSN 0029-599X (print), 0945-3245 (electronic).

Chen:2003:CTS

[CGL03] Zhangxin Chen, Roland Glowinski, and Kaitai Li, editors. *Current trends in scientific computing*, volume 329 of *Contemporary Mathematics*. American Mathematical Society, Providence, RI, USA, 2003. ISBN 0-8218-3261-1. x + 372 pp. Papers from the ICM 2002 Beijing Satellite Conference on Scientific Computing held at Xi'an Jiaotong University, Xi'an, August 15–18, 2002.

Carrier:1988:FAM

[CGR88] J. Carrier, L. Greengard, and V. Rokhlin. A fast adaptive multipole algorithm for particle simulations. *SIAM Journal on Scientific and Statistical Computing*, 9(4):669–686, July 1988. CODEN SIJCD4. ISSN 0196-5204.

Cheng:1999:FAM

[CGR99] H. Cheng, L. Greengard, and V. Rokhlin. A fast adaptive multipole algorithm in three dimensions. *Journal of Computational Physics*, 155(2): 468–498, November 1, 1999. CODEN JCTPAH. ISSN 0021-9991 (print), 1090-2716 (electronic). URL `http://www.sciencedirect.com/science/article/pii/S0021999199963556`.

Cohen:2003:MNA

[CHJN03] Gary C. Cohen, Erkki Heikkola, Patrick Joly, and Pekka Neittaanmäki, editors. *Mathematical and numerical aspects of wave propagation—WAVES 2003*. Springer-Verlag, Berlin, Germany / Heidelberg, Germany / London, UK / etc., 2003. ISBN 3-540-40127-X.

Cheng:2006:AFS

[CHL06] Hongwei Cheng, Jingfang Huang, and Terry Jo Leiterman. An adaptive fast solver for the modified Helmholtz equation in two dimensions. *Journal of Computational Physics*, 211(2):616–637, 2006. CODEN JCTPAH. ISSN 0021-9991 (print), 1090-2716 (electronic).

Cipra:2000:BCE

[Cip00] Barry A. Cipra. The best of the 20th Century: Editors name top 10 algorithms. *SIAM News*, 33 (4):1–2, May 2000. ISSN 0036-1437. URL `https://archive.siam.org/pdf/news/637.pdf`.

Chowdhury:2005:SLM

[CJ05] Indranil Chowdhury and Vikram Jandhyala. Single level multipole expansions and operators for potentials of the form $r^{-\lambda}$. *SIAM Journal on Scientific Computing*, 26(3):930–943, May 2005. CODEN SJOCE3. ISSN 1064-8275 (print), 1095-7197 (electronic). URL `http://epubs.siam.org/sam-bin/dbq/article/60224`.

Chew:1997:FSM

[CJL+97] W. C. Chew, J. M. Jin, C. C. Lu, E. Michielssen, and J. M. Song. Fast solution methods in electromagnetics. *IEEE Transactions on Antennas and Propagation*, 45(3): 533–543, March 1997. CODEN IETPAK. ISSN 0018-926x (print), 1558-2221 (electronic).

Callahan:1995:ADC

[CK95a] Paul B. Callahan and S. Rao Kosaraju. Algorithms for dynamic closest pair and n-body potential fields. In *Proceedings of the Sixth Annual ACM-SIAM Symposium on Discrete Algorithms (San Francisco, CA, 1995)*, pages 263–272. ACM Press, New York, NY 10036, USA, 1995.

Callahan:1995:DMP

[CK95b] Paul B. Callahan and S. Rao Kosaraju. A decomposition of multidimensional point sets with applications to k-nearest-neighbors and n-body potential fields. *Journal of the ACM*, 42(1):67–90, January 1995. CODEN JACOAH. ISSN 0004-5411 (print), 1557-735X (electronic). URL `http://www.acm.org/pubs/toc/Abstracts/0004-5411/200853.html`.

Cottet:2000:VMT

[CK00] G.-H. (Georges-Henri) Cottet and Petros D. Koumoutsakos. *Vortex methods: theory and practice*. Cambridge University Press, Cambridge, UK, 2000. ISBN 0-521-62186-0 (hardcover), 0-511-52644-X (electronic). xiii + 313 pp. LCCN QA925 .C68 2000. URL `http://www.loc.gov/catdir/description/cam029/99012277.htm`; `http://www.loc.gov/catdir/samples/cam032/99012277.htm`; `http:`

//www.loc.gov/catdir/toc/cam023/99012277.htm.

Csoka:2020:SDF

[CK20] József Csóka and Mihály Kállay. Speeding up density fitting Hartree–Fock calculations with multipole approximations. *Molecular Physics*, page e1769213, June 2020. CODEN MOPHAM. ISSN 0026-8976 (print), 1362-3028 (electronic). URL https://www.tandfonline.com/doi/abs/10.1080/00268976.2020.1769213.

Cruz:2011:FMM

[CKB11] F. A. Cruz, M. G. Knepley, and L. A. Barba. Fast multipole method for particle interactions: an open source parallel library component. In Tromeur-Dervout et al. [TDBEE11], pages 285–292. CODEN LNCSA6. ISBN 3-642-14437-3 (print), 3-642-14438-1 (e-book). ISSN 1439-7358. LCCN ???? URL http://link.springer.com/content/pdf/10.1007/978-3-642-14438-7_30. Proceedings of the twentieth meeting, Parallel CFD 2008, held May 19–22, 2008 in Lyon, France.

Chau:2008:AFM

[CKE08] Nguyen Hai Chau, Atsushi Kawai, and Toshikazu Ebisuzaki. Acceleration of Fast Multipole Method using special-purpose computer GRAPE. *The International Journal of High Performance Computing Applications*, 22 (2):194–205, May 2008. CODEN IHPCFL. ISSN 1094-3420 (print), 1741-2846 (electronic). URL http://hpc.sagepub.com/content/22/2/194.full.pdf+html.

Chynoweth:1991:SOL

[CKS91] S. Chynoweth, U. C. Klomp, and L. E. Scales. Simulation of organic liquids using pseudo-pairwise interatomic forces on a toroidal transputer array. *Computer Physics Communications*, 62 (2–3):297–306, March 1991. CODEN CPHCBZ. ISSN 0010-4655 (print), 1879-2944 (electronic).

Caillol:1991:NSH

[CL91] J. M. Caillol and D. Levesque. Numerical simulations of homogeneous and inhomogeneous ionic systems: An efficient alternative to the Ewald method. *Journal of Chemical Physics*, 94(1):597–607, 1991. CODEN JCPSA6. ISSN 0021-9606 (print), 1089-7690 (electronic).

Cecka:2012:FMM

[CL12] Cristopher Cecka and Pierre-David Létourneau. Fast multipole method using the Cauchy integral formula. In Engquist et al. [ERT12], pages 127–144. CODEN LNCSA6. ISBN 3-642-21942-X (print), 3-642-21943-8 (e-book). ISSN 1439-7358. LCCN ???? URL http://link.springer.com/content/pdf/10.1007/978-3-642-21943-6_6.

Coifman:2006:DW

[CM06] Ronald R. Coifman and Mauro Maggioni. Diffusion wavelets. *Applied and Computational Harmonic Analysis. Time-Frequency and Time-Scale Analysis, Wavelets, Numerical Algorithms, and Applications*, 21(1):53–94, 2006. ISSN 1063-5203 (print), 1096-603x (electronic).

Coulier:2017:IFM

[CPD17] Pieter Coulier, Hadi Pouransari, and Eric Darve. The inverse fast multipole method: Using a fast approximate direct solver as a preconditioner for dense linear systems. *SIAM Journal on Scientific Computing*, 39(3):A761–A796, ???? 2017. CODEN SJOCE3. ISSN 1064-8275 (print), 1095-7197 (electronic).

Christiansen:1993:FMM

[CPP93] Dorthe Christiansen, John W. Perram, and Henrik G. Petersen. On the fast multipole method for computing the energy of periodic assemblies of charged and dipolar particles. *Journal of Computational Physics*, 107(2):403–405, August 1993. CODEN JCTPAH. ISSN 0021-9991 (print), 1090-2716 (electronic). URL http://www.sciencedirect.com/science/article/pii/S002199918371154X.

Choi:2001:NPO

[CRG01] Cheol Ho Choi, Klaus Ruedenberg, and Mark S. Gordon. New parallel optimal-parameter fast multipole method (OPFMM). *Journal of Computational Chemistry*, 22(13):1484–1501, October 2001. CODEN JCCHDD. ISSN 0192-8651 (print), 1096-987X (electronic).

Coifman:1993:FMM

[CRW93] R. Coifman, V. Rokhlin, and S. Wandzura. The fast multipole method for the wave equation: a pedestrian prescription. *IEEE Antennas and Propagation Magazine*, 35 (3):7–12, June 1993. CODEN IAPMEZ. ISSN 1045-9243 (print), 1558-4143 (electronic).

Cipriani:1982:CEE

[CS82] Joseph Cipriani and Bernard Silvi. Cartesian expressions for electric multipole moment operators. *Molecular Physics*, 45(2):259–272, 1982. CODEN MOPHAM. ISSN 0026-8976 (print), 1362-3028 (electronic).

Chen:1998:FEV

[CS98a] F. Chen and D. Suter. Fast evaluation of vector splines in three dimensions. *Computing: Archiv für informatik und numerik*, 61(3):189–213, 1998.

CODEN CMPTA2. ISSN 0010-485X (print), 1436-5057 (electronic). URL http://www.springer.at/journals/pdf/3809.pdf.

Chen:1998:UFM

[CS98b] Fang Chen and David Suter. Using a fast multipole method to accelerate spline evaluations. *IEEE Computational Science & Engineering*, 5(3): 24–31, July/September 1998. CODEN ISCEE4. ISSN 1070-9924 (print), 1558-190X (electronic). URL http://dlib.computer.org/cs/books/cs1998/pdf/c3024.pdf; http://www.computer.org/cse/cs1998/c3024abs.htm.

Challacombe:1995:RRC

[CSA95] Matt Challacombe, Eric Schwegler, and Jan Almlof. Recurrence relations for calculations of the Cartesian multipole tensor. *Chemical Physics Letters*, 241(1–2):67–72, July 14, 1995. CODEN CHPLBC. ISSN 0009-2614 (print), 1873-4448 (electronic).

Chao:19xx:MFM

[CSMCxx] Hsueh-Yung Chao, Jiming Song, Eric Michielssen, and Weng Cho Chew. The multilevel fast multipole algorithm for analyzing electromagnetic radiation from complex surfaces-wire structures. Technical report, Center for Computational Electromagnetics, Department of Electrical and Computer Engineering, University of Illinois at Urbana-Champaign, Urbana, IL 61801-2991, 19xx. URL http://www.ecs.umass.edu/ece/allerton/papers/MFM/.

Clark:1994:PMD

[CvHMS94] Terry W. Clark, Reinhard von Hanxleden, J. Andrew McCammon, and L. Ridgway Scott. Parallelizing molecular dynamics using spatial decomposition. In IEEE [IEE94b], pages 357–364. ISBN 0-8186-5680-8 (paper), 0-8186-5681-6 (microfiche). LCCN QA76.58 .S32 1994. IEEE catalog number 94TH0637-9.

Chen:2014:FST

[CWA14] Jie Chen, Lei Wang, and Mihai Anitescu. A fast summation tree code for Matérn kernel. *SIAM Journal on Scientific Computing*, 36(1): A289–A309, ???? 2014. CODEN SJOCE3. ISSN 1064-8275 (print), 1095-7197 (electronic).

Cocle:2008:CVC

[CWD08] Roger Cocle, Grégoire Winckelmans, and Goéric Daeninck. Combining the vortex-in-cell and parallel fast multipole methods for efficient domain decomposition simulations. *Journal of Computational Physics*, 227(21):9091–

9120, 2008. CODEN JCTPAH. ISSN 0021-9991 (print), 1090-2716 (electronic).

Challacombe:1997:PBC

[CWHG97] Matt Challacombe, Chris White, and Martin Head-Gordon. Periodic boundary conditions and the fast multipole method. *Journal of Chemical Physics*, 107(23): 10131–??, ???? 1997. CODEN JCPSA6. ISSN 0021-9606 (print), 1089-7690 (electronic).

Chen:2008:FFM

[CWK08] Z.-S. Chen, H. Waubke, and W. Kreuzer. A formulation of the fast multipole boundary element method (FMBEM) for acoustic radiation and scattering from three-dimensional structures. *Journal of Computational Acoustics*, 16(2):303–320, 2008. ISSN 0218-396X.

Cai:2021:SMV

[CX21] Difeng Cai and Jianlin Xia. A stable matrix version of the fast multipole method: stabilization strategies and examples. *Electronic Transactions on Numerical Analysis*, 54:581–609, 2021. CODEN ???? ISSN 1068-9613 (print), 1097-4067 (electronic). URL `https://etna.math.kent.edu/vol.54.2021/pp581-609.dir/pp581-609.pdf; https://etna.math.kent.edu/volumes/2021-2030/vol54/abstract.php?vol=54&pages=581-609`.

Dachsel:2006:FAD

[Dac06] Holger Dachsel. Fast and accurate determination of the Wigner rotation matrices in the fast multipole method. *Journal of Chemical Physics*, 124(14):144115, April 14, 2006. CODEN JCPSA6. ISSN 0021-9606 (print), 1089-7690 (electronic).

Dachsel:2009:ECF

[Dac09] Holger Dachsel. An error-controlled fast multipole method. *Journal of Chemical Physics*, 131(24):244102, December 28, 2009. CODEN JCPSA6. ISSN 1089-7690. See correction [Dac10].

Dachsel:2010:CAE

[Dac10] Holger Dachsel. Corrected article: "An error-controlled fast multipole method" [J. Chem Phys. **131**, 244102 (2009)]. *Journal of Chemical Physics*, 132(11):119901, March 21, 2010. CODEN JCPSA6. ISSN 1089-7690. See [Dac09].

Darve:1997:FMM

[Dar97] Eric Darve. Fast-multipole method: a mathematical study. *Comptes Rendus des Séances de l'Académie des Sciences. Série I. Mathématique*, 325(9):1037–1042, 1997. CODEN CASMEI. ISSN 0249-6291.

Darve:2000:FMMa

[Dar00a] Eric Darve. The fast multipole method. I. Error analysis and asymptotic complexity. *SIAM Journal on Numerical Analysis*, 38(1):98–128, 2000. CODEN SJNAAM. ISSN 0036-1429 (print), 1095-7170 (electronic).

Darve:2000:FMMb

[Dar00b] Eric Darve. The fast multipole method: numerical implementation. *Journal of Computational Physics*, 160(1):195–240, 2000. CODEN JCTPAH. ISSN 0021-9991 (print), 1090-2716 (electronic).

Darrigrand:2002:CFM

[Dar02] Eric Darrigrand. Coupling of fast multipole method and microlocal discretization for the 3-D Helmholtz equation. *Journal of Computational Physics*, 181(1):126–154, 2002. CODEN JCTPAH. ISSN 0021-9991 (print), 1090-2716 (electronic).

Deng:2007:EFM

[DC07] Shaozhong Deng and Wei Cai. Extending the fast multipole method for charges inside a dielectric sphere in an ionic solvent: high-order image approximations for reaction fields. *Journal of Computational Physics*, 227(2):1246–1266, 2007. CODEN JCTPAH. ISSN 0021-9991 (print), 1090-2716 (electronic).

deCastro:2006:NMA

[dCGQS06] Alfredo Bermúdez de Castro, Dolores Gómez, Peregrina Quintela, and Pilar Salgado, editors. *Numerical mathematics and advanced applications*. Springer-Verlag, Berlin, 2006. ISBN 3-540-34287-7.

Draghicescu:1995:FAV

[DD95] Cristina I. Draghicescu and Mircea Draghicescu. A fast algorithm for vortex blob interactions. *Journal of Computational Physics*, 116(1):69–78, January 1995. CODEN JCTPAH. ISSN 0021-9991 (print), 1090-2716 (electronic). URL `http://www.sciencedirect.com/science/article/pii/S0021999185710066`.

Darbas:2013:CAP

[DDL13] M. Darbas, E. Darrigrand, and Y. Lafranche. Combining analytic preconditioner and Fast Multipole Method for the 3-D Helmholtz equation. *Journal of Computational Physics*, 236(??):289–316, March 1, 2013. CODEN JCTPAH. ISSN 0021-9991 (print), 1090-2716 (electronic). URL `http://www.sciencedirect.com/science/article/pii/S0021999112006948`.

Dehnen:2002:HFC

[Deh02] Walter Dehnen. A hierarchical $O(N)$ force calculation algorithm. *Journal of Computational Physics*, 179(1):27–42, June 10, 2002.

CODEN JCTPAH. ISSN 0021-9991 (print), 1090-2716 (electronic). URL http://www.sciencedirect.com/science/article/pii/S0021999102970269.

Demmel:1995:FHM

[Dem95] James Demmel. Fast hierarchical methods for the N-body problem (continued) (CS 267, Apr 25 1995). CS 267 class notes., April 25, 1995. URL http://now.cs.berkeley.edu/~demmel/cs267/lecture27/lecture27OLD.html.

Demmel:1996:FHMa

[Dem96a] James Demmel. Fast hierarchical methods for the N-body problem, part 1 (CS 267, Apr 16 1996). CS 267 class notes., April 16, 1996. URL http://www.cs.berkeley.edu/~demmel/cs267/lecture26/lecture26.html.

Demmel:1996:FHMb

[Dem96b] James Demmel. Fast hierarchical methods for the N-body problem, part 2 (CS 267, Apr 16 1996). CS 267 class notes., April 16, 1996. URL http://www.cs.berkeley.edu/~demmel/cs267/lecture27/lecture27.html.

Dutt:1996:FAP

[DGR96] A. Dutt, M. Gu, and V. Rokhlin. Fast algorithms for polynomial interpolation, integration, and differentiation. *SIAM Journal on Numerical Analysis*, 33(5):1689–1711, October 1996. CODEN SJNAAM. ISSN 0036-1429 (print), 1095-7170 (electronic).

Dejonge:1986:USS

[DH86] Herwig Dejonge and Piet Hut. Round-off sensitivity in the N-body problem. In Hut and McMillan [HM86], pages 212–214. ISBN 0-387-17196-7 (US). LCCN QB807 .U74 1986.

Darve:2004:EFM

[DH04a] Eric Darve and Pascal Havé. Efficient fast multipole method for low-frequency scattering. *Journal of Computational Physics*, 197(1):341–363, 2004. CODEN JCTPAH. ISSN 0021-9991 (print), 1090-2716 (electronic).

Darve:2004:FMM

[DH04b] Eric Darve and Pascal Havé. A fast multipole method for Maxwell equations stable at all frequencies. *Philosophical transactions of the Royal Society of London Series A*, 362(1816):603–628, March 15, 2004. CODEN PTRMAD, PTMSFB. ISSN 1364-503X (print), 1471-2962 (electronic).

Dorband:2003:SHS

[DHM03] Ernst Nils Dorband, Marc Hemsendorf, and David Merritt. Systolic and hypersystolic algorithms for the gravitational N-body problem, with an application to Brownian motion. *Journal of Computational Physics*, 185 (2):484–511, March 1, 2003. CODEN JCTPAH. ISSN 0021-9991 (print), 1090-2716 (electronic). URL http://www.sciencedirect.com/science/article/pii/S0021999102000670.

Debolt:1993:AMP

[DK93] Stephen E. Debolt and Peter A. Kollman. AMBERCUBE MD, parallelization of AMBER's molecular dynamics module for distributed-memory hypercube computers. *Journal of Computational Chemistry*, 14(3):312–329, March 1993. CODEN JCCHDD. ISSN 0192-8651 (print), 1096-987X (electronic).

Ding:1992:ALSb

[DKG92a] Hong-Qiang Ding, Naoki Karasawa, and William A. Goddard, III. Atomic level simulations on a million particles — the cell multipole method of Coulomb and London nonbond interactions. *Journal of Chemical Physics*, 97(6):4309–4315, September 15, 1992. CODEN JCPSA6. ISSN 0021-9606 (print), 1089-7690 (electronic).

Ding:1992:OSC

[DKG92b] Hong-Qiang Ding, Naoki Karasawa, and William A. Goddard, III. Optimal spline cutoffs for Coulomb and van der Waals interactions. *Chemical Physics Letters*, 193 (1–3):197–201, 1992. CODEN CHPLBC. ISSN 0009-2614 (print), 1873-4448 (electronic).

Ding:1992:RCM

[DKG92c] Hong-Qiang Ding, Naoki Karasawa, and William A. Goddard, III. The reduced cell multipole method for Coulomb interactions in periodic systems with million-atom unit cells. *Chemical Physics Letters*, 196(??):6–10, August 7, 1992. CODEN CMPHC2. ISSN 0301-0104 (print), 1873-4421 (electronic).

Dubinski:2004:GPH

[DKPH04] J. Dubinski, J. Kim, C. Park, and R. Humble. GOTPM: a parallel hybrid particle-mesh treecode. *New Astronomy*, 9 (??):111–126, February 2004. CODEN NEASFS. ISSN 1384-1076 (print), 1384-1092 (electronic).

Davis:1990:CEF

[DM90] M. E. Davis and J. A. McCammon. Calculating electrostatic forces from grid-calculated potentials. *Journal of Computational Chemistry*, 11(3):401–409, April 1990. CODEN JCCHDD.

ISSN 0192-8651 (print), 1096-987X (electronic).

Darrigrand:2007:CUW

[DM07] E. Darrigrand and P. Monk. Coupling of the ultra-weak variational formulation and an integral representation using a fast multipole method in electromagnetism. *Journal of Computational and Applied Mathematics*, 204 (2):400–407, July 15, 2007. CODEN JCAMDI. ISSN 0377-0427 (print), 1879-1778 (electronic). URL http://www.sciencedirect.com/science/article/pii/S0377042706003670.

Darrigrand:2012:CUW

[DM12] E. Darrigrand and P. Monk. Combining the Ultra-Weak Variational Formulation and the multilevel fast multipole method. *Applied Numerical Mathematics: Transactions of IMACS*, 62(6):709–719, June 2012. CODEN ANMAEL. ISSN 0168-9274 (print), 1873-5460 (electronic). URL http://www.sciencedirect.com/science/article/pii/S016892741100119X.

Dansou:2020:OFM

[DMC20] Anicet Dansou, Saïda Mouhoubi, and Cyrille Chazallon. Optimizations of a fast multipole symmetric Galerkin boundary element method code. *Numerical Algorithms*, 84(3): 825–846, July 2020. CODEN NUALEG. ISSN 1017-1398 (print), 1572-9265 (electronic). URL http://link.springer.com/article/10.1007/s11075-019-00781-z.

Deem:1990:TCS

[DNS90] M. W. Deem, J. M. Newsam, and S. K. Sinha. The $h = 0$ term in Coulomb sums by the Ewald transformation. *J. Phys. Chem.*, 94:8356–8359, 1990. CODEN JPCHAX. ISSN 0022-3654 (print), 1541-5740 (electronic).

Dutt:1995:FFT

[DR95] A. Dutt and Vladimir Rokhlin. Fast Fourier transforms for non-equispaced data. 2. *Applied and Computational Harmonic Analysis. Time-Frequency and Time-Scale Analysis, Wavelets, Numerical Algorithms, and Applications*, 2(1):85–100, January 1995. ISSN 1063-5203 (print), 1096-603x (electronic).

Dikaiakos:1996:FAS

[DRS96] Marios D. Dikaiakos, Anne Rogers, and Kenneth Steiglitz. Functional algorithm simulation of the fast multipole method: Architectural implications. *Parallel Processing Letters*, 6(1):55–66, March 1996. CODEN PPLTEE. ISSN 0129-6264 (print), 1793-642X (electronic).

Dongarra:2000:GEI

[DS00] Jack Dongarra and Francis Sullivan. Guest Editors' introduction: The top 10 algorithms. *Computing in Science and Engineering*, 2 (1):22–23, January/February 2000. CODEN CSENFA. ISSN 1521-9615 (print), 1558-366X (electronic). URL `http://dlib.computer.org/cs/books/cs2000/pdf/c1022.pdf`; `http://www.computer.org/cse/cs1999/c1022abs.htm`. See correspondence [MBS+00].

Dombroski:1996:KCE

[DTG96] Jeremy P. Dombroski, Stephen W. Taylor, and Peter M. W. Gill. KWIK — Coulomb energies in $O(N)$ work. *J. Phys. Chem.*, 100:6272–6276, April 11 1996. CODEN JPCHAX. ISSN 0022-3654 (print), 1541-5740 (electronic).

Dubinski:1996:PTC

[Dub96] John Dubinski. A parallel tree code. *New Astronomy*, 1(2): 133–147, October 1996. CODEN NEASFS. ISSN 1384-1076 (print), 1384-1092 (electronic).

Dembart:1998:AFM

[DY98] Ben Dembart and Elizabeth Yip. The accuracy of fast multipole methods for Maxwell's equations. *IEEE Computational Science & Engineering*, 5(3):48–56, July/September 1998. CODEN ISCEE4. ISSN 1070-9924 (print), 1558-190X (electronic). URL `http://dlib.computer.org/cs/books/cs1998/pdf/c3048.pdf`; `http://www.computer.org/cse/cs1998/c3048abs.htm`.

Darden:1993:PME

[DYP93] Tom Darden, Darrin York, and Lee Pedersen. Particle mesh Ewald — an $N \log N$ method for Ewald sums in large systems. *Journal of Chemical Physics*, 98:10089–10092, June 15, 1993. CODEN JCPSA6. ISSN 0021-9606 (print), 1089-7690 (electronic).

Elliott:1994:FFT

[EB94] William D. Elliott and John A. Board, Jr. Fast Fourier transform accelerated fast multipole algorithm. Technical Report TR 94-001, Duke University, Durham, NC, USA, ???? 1994.

Elliott:1996:FFT

[EB96] William D. Elliott and John A. Board, Jr. Fast Fourier transform accelerated fast multipole algorithm. *SIAM Journal on Scientific Computing*, 17(2): 398–415, March 1996. CODEN SJOCE3. ISSN 1064-8275 (print), 1095-7197 (electronic).

Eldredge:2002:VPM

[ECL02] Jeff D. Eldredge, Tim Colonius, and Anthony Leonard. A vortex particle method for two-dimensional compressible flow. *Journal of Compu-

tational Physics, 179(2):371–399, 2002. CODEN JCTPAH. ISSN 0021-9991 (print), 1090-2716 (electronic).

Ebisuzaki:1993:GSP

[EFT+93] T. Ebisuzaki, T. Fukushige, M. Taiji, J. Makino, D. Sugimoto, T. Ito, S. K. Okumura, E. Hashimoto, K. Tomida, and N. Miyakawa. GRAPE: special purpose computer for simulations of many-body systems. In IEEE, editor, *Proceeding of the Twenty-Sixth Hawaii International Conference on System Sciences, 1993*, pages 134–143. IEEE Computer Society Press, 1109 Spring Street, Suite 300, Silver Spring, MD 20910, USA, 1993.

Ethridge:2001:NFM

[EG01] Frank Ethridge and Leslie Greengard. A new fast-multipole accelerated Poisson solver in two dimensions. *SIAM Journal on Scientific Computing*, 23(3):741–760, 2001. CODEN SJOCE3. ISSN 1064-8275 (print), 1095-7197 (electronic).

Ergul:2008:EPM

[EG08] Özgür Ergül and Levent Gürel. Efficient parallelization of the multilevel fast multipole algorithm for the solution of large-scale scattering problems. *IEEE Transactions on Antennas and Propagation*, 56(8, part 1):2335–2345, 2008. CODEN IETPAK. ISSN 0018-926x (print), 1558-2221 (electronic).

Ergul:2009:CIE

[EG09a] Özgür Ergül and Levent Gürel. Comparison of integral-equation formulations for the fast and accurate solution of scattering problems involving dielectric objects with the multilevel fast multipole algorithm. *IEEE Transactions on Antennas and Propagation*, 57(1):176–187, 2009. CODEN IETPAK. ISSN 0018-926x (print), 1558-2221 (electronic).

Ergul:2009:HPS

[EG09b] Özgür Ergül and Levent Gürel. A hierarchical partitioning strategy for an efficient parallelization of the multilevel fast multipole algorithm. *IEEE Transactions on Antennas and Propagation*, 57(6):1740–1750, 2009. CODEN IETPAK. ISSN 0018-926x (print), 1558-2221 (electronic).

Ergul:2013:FAA

[EG13] Ozgur Ergul and Levent Gurel. Fast and accurate analysis of large-scale composite structures with the parallel multilevel fast multipole algorithm. *Journal of the Optical Society of America. A, Optics, image science, and vision*, 30(3):509–517, March

1, 2013. CODEN JOAOD6. ISSN 1520-8532.

Eichinger:1997:FAR

[EGHT97] M. Eichinger, H. Grubmüller, Helmut Heller, and Paul Tavan. FAMUSAMM: an algorithm for rapid evaluation of electrostatic interactions in molecular dynamics simulations. *Journal of Computational Chemistry*, 18 (14):1729–1749, November 15, 1997. CODEN JCCHDD. ISSN 0192-8651 (print), 1096-987X (electronic).

Ebisuzaki:1992:GSP

[EIM+92] T. Ebisuzaki, T. Ito, J. Makino, S. K. Okumura, and D. Sugimoto. GRAPE-2A: a special purpose computer for simulations of many-body systems with arbitrary central force. In IEEE, editor, *Proceedings of the Twenty-Fifth Hawaii International Conference on System Sciences, 1992*, pages 171–180. IEEE Computer Society Press, 1109 Spring Street, Suite 300, Silver Spring, MD 20910, USA, 1992.

Engheta:1992:FMM

[EMRV92] Nader Engheta, William D. Murphy, Vladimir Rokhlin, and Marius S. Vassiliou. The fast multipole method (FMM) for electromagnetic scattering problems. *IEEE Transactions on Antennas and Propagation*, 40(6):634–641, June 1992. CODEN IETPAK. ISSN 0018-926x (print), 1558-2221 (electronic).

Edelman:1999:FFF

[EMT99] Alan Edelman, Peter McCorquodale, and Sivan Toledo. The future Fast Fourier Transform? *SIAM Journal on Scientific Computing*, 20(3):1094–1114, May 1999. CODEN SJOCE3. ISSN 1064-8275 (print), 1095-7197 (electronic). URL `http://epubs.siam.org/sam-bin/dbq/article/31626`.

Engblom:2011:WSS

[Eng11] Stefan Engblom. On well-separated sets and fast multipole methods. *Applied Numerical Mathematics: Transactions of IMACS*, 61(10): 1096–1102, October 2011. CODEN ANMAEL. ISSN 0168-9274 (print), 1873-5460 (electronic).

Ergul:2011:SLS

[Erg11] Ozgur Ergul. Solutions of large-scale electromagnetics problems involving dielectric objects with the parallel multilevel fast multipole algorithm. *Journal of the Optical Society of America. A, Optics, image science, and vision*, 28(11):2261–2268, November 1, 2011. CODEN JOAOD6. ISSN 1520-8532.

Engquist:2012:NAM

[ERT12] Björn Engquist, Olof Runborg, and Yen-Hsi R. Tsai, editors. *Numerical Analysis of Multiscale Computations: Proceedings of a Winter Workshop at the Banff International Research Station 2009*, volume 82 of *Lecture Notes in Computational Science and Engineering*. Springer-Verlag, Berlin, Germany / Heidelberg, Germany / London, UK / etc., 2012. CODEN LNCSA6. ISBN 3-642-21942-X (print), 3-642-21943-8 (e-book). ISSN 1439-7358. LCCN ???? URL http://link.springer.com/book/10.1007/978-3-642-21943-6; http://www.springerlink.com/content/978-3-642-21943-6.

El-Shenawee:2004:RSM

[ES04] Magda El-Shenawee. Resonant spectra of malignant breast cancer tumors using the three-dimensional electromagnetic fast multipole model. *IEEE Transactions on Biomedical Engineering*, 51(1):35–44, January 2004. CODEN IEBEAX. ISSN 0018-9294 (print), 1558-2531 (electronic).

Ergin:1998:FET

[ESM98] A. Arif Ergin, Balasubramaniam Shanker, and Eric Michielssen. Fast evaluation of three-dimensional transient wave fields using diagonal translation operators. *Journal of Computational Physics*, 146(1):157–180, October 10, 1998. CODEN JCTPAH. ISSN 0021-9991 (print), 1090-2716 (electronic). URL http://www.sciencedirect.com/science/article/pii/S0021999198959083.

El-Shenawee:2001:MCS

[ESRS01] M. El-Shenawee, C. Rappaport, and M. Silevitch. Monte Carlo simulations of electromagnetic wave scattering from a random rough surface with three-dimensional penetrable buried object: mine detection application using the steepest-descent fast multipole method. *Journal of the Optical Society of America. A, Optics, image science, and vision*, 18(12):3077–3084, December 2001. CODEN JOAOD6. ISSN 1084-7529 (print), 1520-8532 (electronic).

Esselink:1995:CAL

[Ess95] Klaas Esselink. A comparison of algorithms for long-range interactions. *Computer Physics Communications*, 87(3):375–395, June 1995. CODEN CPHCBZ. ISSN 0010-4655 (print), 1879-2944 (electronic).

Fann:2004:SOM

[FBHJ04] G. Fann, G. Beylkin, R. J. Harrison, and K. E. Jordan. Singular operators in multiwavelet bases. *IBM Systems Journal*, 48(2):161–172, ???? 2004. CODEN IBMSA7. ISSN 0018-8670. URL http://www.research.

ibm.com/journal/rd/482/fann.html; http://www.research.ibm.com/journal/rd/482/fann.pdf.

Fong:2009:BBF

[FD09] William Fong and Eric Darve. The black-box fast multipole method. *Journal of Computational Physics*, 228(23):8712–8725, 2009. CODEN JCTPAH. ISSN 0021-9991 (print), 1090-2716 (electronic).

Fitzpatrick:2021:CME

[FDvW21] Brian Fitzpatrick, Enzo De Sena, and Toon van Waterschoot. On the convergence of the multipole expansion method. *SIAM Journal on Numerical Analysis*, 59(5):2473–2499, ???? 2021. CODEN SJNAAM. ISSN 0036-1429 (print), 1095-7170 (electronic).

Franklin:1996:GMI

[FG96] Mark A. Franklin and Vasudha Govindan. A general matrix iterative model for dynamic load balancing. *Parallel Computing*, 22(7):969–989, October 1, 1996. CODEN PACOEJ. ISSN 0167-8191 (print), 1872-7336 (electronic). URL http://www.elsevier.com/cgi-bin/cas/tree/store/parco/cas_sub/browse/browse.cgi?year=1996&volume=22&issue=7&aid=1077.

Fedichev:2011:CEM

[FGM11] P. O. Fedichev, E. G. Getmantsev, and L. I. Menshikov. $O(N \log N)$ continuous electrostatics method for fast calculation of solvation energies of biomolecules. *Journal of Computational Chemistry*, 32(7):1368–1376, May 2011. CODEN JCCHDD. ISSN 0192-8651 (print), 1096-987X (electronic).

Fukushige:1999:HPS

[FHM99] Toshiyuki Fukushige, Piet Hut, and Junichiro Makino. High-performance special-purpose computers in science. *Computing in Science and Engineering*, 1(2):12–13, 16, March/April 1999. CODEN CSENFA. ISSN 1521-9615 (print), 1558-366X (electronic). URL http://dlib.computer.org/cs/books/cs1999/pdf/c2012.pdf; http://ieeexplore.ieee.org/stamp/stamp.jsp?tp=&arnumber=753041.

Fortin:2013:ADD

[FL13] Pierre Fortin and Jean-Luc Lamotte. An (almost) direct deployment of the Fast Multipole Method on the Cell processor. *The Journal of Supercomputing*, 65(3):1205–1222, September 2013. CODEN JOSUED. ISSN 0920-8542 (print), 1573-0484 (electronic). URL http://link.springer.com/article/10.1007/s11227-013-0877-z.

Figueirido:1997:ELS

[FLZB97a] Francisco Figueirido, Ronald M. Levy, Ruhong Zholl, and B. J. Berne. Erratum: "Large scale simulation of macromolecules in solution: Combining the periodic fast multipole method with multiple time step integrators". *Journal of Chemical Physics*, 107 (17):7002–??, ???? 1997. CODEN JCPSA6. ISSN 0021-9606 (print), 1089-7690 (electronic).

Figueirido:1997:LSS

[FLZB97b] Francisco Figueirido, Ronald M. Levy, Ruhong Zhou, and B. J. Berne. Large scale simulation of macromolecules in solution: Combining the periodic fast multipole method with multiple time step integrators. *Journal of Chemical Physics*, 106(23):9835–9849, ???? 1997. CODEN JCPSA6. ISSN 0021-9606 (print), 1089-7690 (electronic).

Fukushige:1995:BSG

[FM95] T. Fukushige and J. Makino. N-body simulation of galaxy formation on GRAPE-4 special-purpose computer. In *Proceedings of the 1995 ACM/IEEE Conference on Supercomputing*, page ???? ACM Press, New York, NY 10036, USA, 1995.

Fukushige:1996:BSG

[FM96] T. Fukushige and J. Makino. N-body simulation of galaxy formation on GRAPE-4 special-purpose computer. In ACM [ACM96], pages 48–?? ISBN 0-89791-854-1. LCCN ???? URL `http://www.supercomp.org/sc96/proceedings/`. ACM Order Number: 415962, IEEE Computer Society Press Order Number: RS00126.

Fukushige:1993:SPC

[FMI+93] T. Fukushige, J. Makino, T. Ito, S. K. Okumura, T. Ebisuzaki, and D. Sugimoto. A special purpose computer for particle dynamics simulation based on Ewald method: WINE-1. In IEEE, editor, *Proceeding of the Twenty-Sixth Hawaii International Conference on System Sciences, 1993*, volume 1, pages 124–133. IEEE Computer Society Press, 1109 Spring Street, Suite 300, Silver Spring, MD 20910, USA, 1993.

Fenley:1996:FAM

[FOCB96] Marcia O. Fenley, Wilma K. Olson, Kiat Chua, and Alexander H. Boschitsch. Fast adaptive multipole method for computation of electrostatic energy in simulations of polyelectrolyte DNA. *Journal of Computational Chemistry*, 17 (8):976–991, June 1996. CODEN JCCHDD. ISSN 0192-8651 (print), 1096-987X (electronic).

Fischer:2005:AIP

[FPG05] Matthias Fischer, Holger Perfahl, and Lothar Gaul. Approximate inverse preconditioning for the fast multipole BEM in acoustics. *Computing and Visualization in Science*, 8(3-4):169–177, 2005. ISSN 1432-9360 (print), 1433-0369 (electronic).

Fullagar:1992:BMM

[FQG+92] David P. Fullagar, Peter J. Quinn, Carl J. Grillmair, John K. Salmon, and Michael S. Warren. *N*-body methods on MIMD supercomputers: Astrophysics on the Intel Touchstone Delta. In Anonymous [Ano92], page 307. ISBN 0-86444-270-X. LCCN ???? URL `ftp://ftp.cacr.caltech.edu/nbody/asc5paper.ps.Z`.

Fitch:2008:BMS

[FRE+08] B. G. Fitch, A. Rayshubskiy, M. Eleftheriou, T. J. C. Ward, M. E. Giampapa, M. C. Pitman, J. W. Pitera, W. C. Swope, and R. S. Germain. Blue Matter: Scaling of *N*-body simulations to one atom per node. *IBM Journal of Research and Development*, 52 (1/2):145–??, January/March 2008. CODEN IBMJAE. ISSN 0018-8646 (print), 2151-8556 (electronic). URL `http://www.research.ibm.com/journal/rd/521/fitch.html`.

Frauenfelder:2005:FEE

[FST05] Philipp Frauenfelder, Christoph Schwab, and Radu Alexandru Todor. Finite elements for elliptic problems with stochastic coefficients. *Computer Methods in Applied Mechanics and Engineering*, 194(2-5):205–228, 2005. CODEN CMMECC. ISSN 0045-7825, 0374-2830.

Fujiwara:1998:FMM

[Fuj98] H. Fujiwara. The fast multipole method for integral equations of seismic scattering problems. *Geophysical journal international*, 133(3):773–??, ???? 1998. CODEN GJINEA. ISSN 0956-540x (print), 1365-246x (electronic).

Fuller:1997:OMX

[Ful97] Gene E. Fuller, editor. *Optical microlithography X: 12–14 March, 1997, Santa Clara, California*, number 3051 in Proceedings — SPIE, The International Society for Optical Engineering. SPIE Optical Engineering Press, Bellingham, WA, USA, 1997. ISBN 0-8194-2465-X. ISSN 0277-786X (print), 1996-756X (electronic). LCCN TS510.S63 v.3051.

Gurel:1996:ESS

[GA96a] L. Gurel and M. I. Aksun. Electromagnetic scattering solution of conducting strips in layered media using the fast multipole method.

IEEE microwave and guided wave letters: a publication of the IEEE Microwave Theory and Techniques Society, 6(8):277, ???? 1996. CODEN IMGLE3. ISSN 1051-8207 (print), 1558-2329 (electronic).

Gurel:1996:FMM

[GA96b] L. Gurel and M. I. Aksun. Fast multipole method in layered media: 2-D electromagnetic scattering problems. In IEEE [IEE96a], pages 1734–1737. ISBN 0-7803-3217-2 (casebound), 0-7803-3216-4 (softbound), 0-7803-3218-0 (microfiche). LCCN TK7871.6.A68 1996. Three volumes.

Gujjula:2024:AIF

[GA24] Vaishnavi Gujjula and Sivaram Ambikasaran. Algebraic inverse fast multipole method: a fast direct solver that is better than HODLR based fast direct solver. *Journal of Computational Physics*, 497 (??):??, January 15, 2024. CODEN JCTPAH. ISSN 0021-9991 (print), 1090-2716 (electronic). URL `http://www.sciencedirect.com/science/article/pii/S0021999123007222`.

Gumerov:2013:FMA

[GAD13] Nail A. Gumerov, Ross Adelman, and Ramani Duraiswami. Fast multipole accelerated indirect boundary elements for the Helmholtz equation. *Journal of the Acoustical Society of America*, 133(5):3490, May 2013. CODEN JASMAN. ISSN 1520-8524.

Gaspar:1997:FSB

[Gas97] C. Gaspar. Fast solution of boundary integral equations by using multigrid methods and multipole evaluation technique. In Marchetti et al. [MBA97], pages 603–612. ISBN 1-85312-472-9. LCCN TA347.B69I565 1997.

Gavrilyuk:2011:BRF

[Gav11] I. P. Gavrilyuk. Book review: *Fast multipole boundary element method*. *Mathematics of Computation*, 80 (275):1867–1869, July 2011. CODEN MCMPAF. ISSN 0025-5718 (print), 1088-6842 (electronic). URL `http://www.ams.org/journals/mcom/2011-80-275/S0025-5718-2011-02516-0/home.html`; `http://www.ams.org/journals/mcom/2011-80-275/S0025-5718-2011-02516-0/S0025-5718-2011-02516-0.pdf`.

Gramada:2011:CGE

[GB11] Apostol Gramada and Philip E. Bourne. Coarse-graining the electrostatic potential via distributed multipole expansions. *Computer Physics Communications*, 182(7):1455–1462, July 2011. CODEN CPHCBZ. ISSN 0010-4655 (print), 1879-2944 (electronic). URL http://www.sciencedirect.com/science/article/pii/S0010465511000920.

Gatard:2006:HOB

[GBMN06] L. Gatard, A. Bachelot, and K. Mer-Nkonga. High order boundary integral methods for Maxwell's equations: coupling of microlocal discretization and fast multipole methods. In *Numerical mathematics and advanced applications*, pages 1137–1145. Springer, Berlin, 2006.

Giovannini:1999:FRN

[GCG+99] André Giovannini, Georges-Henri Cottet, Yves Gagnon, Ahmed F. Ghoniem, and Eckart Meiburg, editors. *Flows and related numerical methods*, volume 7 of *ESAIM Proceedings*. Société de Mathématiques Appliquées et Industrielles, Paris, 1999. Available at http://www.emath.fr/Maths/Proc/Vol.7/index.html.

Guan:2018:RPA

[GCH+18] W. Guan, X. Cheng, J. Huang, G. Huber, W. Li, J. A. McCammon, and B. Zhang. RPYFMM: Parallel adaptive fast multipole method for Rotne–Prager–Yamakawa tensor in biomolecular hydrodynamics simulations. *Computer Physics Communications*, 227(??):99–108, June 2018. CODEN CPHCBZ. ISSN 0010-4655 (print), 1879-2944 (electronic). URL http://www.sciencedirect.com/science/article/pii/S001046551830033X.

Gumerov:2003:RCM

[GD03] Nail A. Gumerov and Ramani Duraiswami. Recursions for the computation of multipole translation and rotation coefficients for the 3-D Helmholtz equation. *SIAM Journal on Scientific Computing*, 25(4):1344–1381, July 2003. CODEN SJOCE3. ISSN 1064-8275 (print), 1095-7197 (electronic). URL http://epubs.siam.org/sam-bin/dbq/article/39970.

Gumerov:2005:CSC

[GD05] Nail A. Gumerov and Ramani Duraiswami. Computation of scattering from clusters of spheres using the fast multipole method. *Journal of the Acoustical Society of America*, 117(4 Pt 1):1744–1761, April 2005. CODEN JASMAN. ISSN 0001-4966.

Gumerov:2006:FMM

[GD06] Nail A. Gumerov and Ramani Duraiswami. Fast multipole method for the biharmonic equation in three dimensions. *Journal of Computational Physics*, 215(1):363–383, 2006. CODEN JCTPAH. ISSN 0021-9991 (print), 1090-2716 (electronic).

Gumerov:2007:FRB

[GD07a] Nail A. Gumerov and Ramani Duraiswami. Fast radial basis function interpolation via preconditioned Krylov iteration. *SIAM Journal on Scientific Computing*, 29(5):1876–1899, 2007. CODEN SJOCE3. ISSN 1064-8275 (print), 1095-7197 (electronic).

Gumerov:2007:SPF

[GD07b] Nail A. Gumerov and Ramani Duraiswami. A scalar potential formulation and translation theory for the time-harmonic Maxwell equations. *Journal of Computational Physics*, 225(1):206–236, 2007. CODEN JCTPAH. ISSN 0021-9991 (print), 1090-2716 (electronic).

Gumerov:2008:FMM

[GD08] Nail A. Gumerov and Ramani Duraiswami. Fast multipole methods on graphics processors. *Journal of Computational Physics*, 227(18):8290–8313, 2008. CODEN JCTPAH. ISSN 0021-9991 (print), 1090-2716 (electronic).

Gumerov:2009:BFM

[GD09] Nail A. Gumerov and Ramani Duraiswami. A broadband fast multipole accelerated boundary element method for the three dimensional Helmholtz equation. *Journal of the Acoustical Society of America*, 125(1):191–205, January 2009. CODEN JASMAN. ISSN 1520-8524.

Garcia:2008:ISE

[GDDC08] Eliseo García, Carlos Delgado, Iván González Diego, and Manuel Felipe Cátedra. An iterative solution for electrically large problems combining the characteristic basis function method and the multilevel fast multipole algorithm. *IEEE Transactions on Antennas and Propagation*, 56 (8, part 1):2363–2371, 2008. CODEN IETPAK. ISSN 0018-926x (print), 1558-2221 (electronic).

Grest:1989:VLC

[GDK89] Gary S. Grest, Burkhard Dünweg, and Kurt Kremer. Vectorized link cell Fortran code for molecular dynamics simulations for a large number of particles. *Computer Physics Communications*, 55 (3):269–285, October 1989. CODEN CPHCBZ. ISSN 0010-4655 (print), 1879-2944 (electronic).

Goude:2013:AFM

[GE13] Anders Goude and Stefan Engblom. Adaptive fast multipole methods on the GPU. *The Journal of Supercomputing*, 63(3):897–918, March 2013. CODEN JOSUED. ISSN 0920-8542 (print), 1573-0484 (electronic). URL `http://link.springer.com/article/10.1007/s11227-012-0836-0`; `http://link.springer.com/content/pdf/10.1007/s11227-012-0836-0`.

Gaul:2006:LSSb

[GF06a] L. Gaul and M. Fischer.

Large-scale simulations of acoustic-structure interaction using the fast multipole BEM. *Zeitschrift für Angewandte Mathematik und Mechanik*, 86(1):4–17, 2006. CODEN ZAMMAX. ISSN 0044-2267 (print), 1521-4001 (electronic).

Gaul:2006:LSSa

[GF06b] Lothar Gaul and Matthias Fischer. Large-scale simulation of acoustic-structure interaction using the fast multipole BEM. In *Multifield problems in solid and fluid mechanics*, volume 28 of *Lect. Notes Appl. Comput. Mech.*, pages 219–244. Springer, Berlin, 2006.

Greengard:1989:PVF

[GG89] Leslie Greengard and William D. Gropp. A parallel version of the fast multipole method. In Rodrigue [Rod89], pages 213–222. ISBN 0-89871-228-9. LCCN QA76.5 .C61921 1987.

Greengard:1990:PVF

[GG90] L. Greengard and W. D. Gropp. A parallel version of the fast multipole method. *Computers and Mathematics with Applications*, 20(7):63–71, 1990. CODEN CMAPDK. ISSN 0898-1221 (print), 1873-7668 (electronic).

Gimbutas:2016:FMM

[GG16] Zydrunas Gimbutas and Leslie Greengard. A fast multipole method for the evaluation of elastostatic fields in a half-space with zero normal stress. *Advances in Computational Mathematics*, 42(1): 175–198, February 2016. CODEN ACMHEX. ISSN 1019-7168 (print), 1572-9044 (electronic). URL `http://link.springer.com/article/10.1007/s10444-015-9416-1`.

Greenbaum:1993:LED

[GGM93] A. Greenbaum, L. Greengard, and G. B. McFadden. Laplace's equation and the Dirichlet–Neumann map in multiply connected domains. *Journal of Computational Physics*, 105(2): 267–278, April 1993. CODEN JCTPAH. ISSN 0021-9991 (print), 1090-2716 (electronic). URL `http://www.sciencedirect.com/science/article/pii/S0021999183710739`.

Gimbutas:2001:CIP

[GGM01] Zydrunas Gimbutas, Leslie Greengard, and Michael Minion. Coulomb interactions on planar structures: Inverting the square root of the Laplacian. *SIAM Journal on Scientific Computing*, 22(6): 2093–2108, November 2001. CODEN SJOCE3. ISSN 1064-8275 (print), 1095-7197 (electronic). URL `http://epubs.siam.org/sam-bin/dbq/article/36119`.

Greengard:1998:NEE

[GH98] Leslie Greengard and Johan Helsing. On the numerical evaluation of elastostatic fields in locally isotropic two-dimensional composites. *Journal of the mechanics and physics of solids*, 46 (8):1441–1462, 1998. CODEN JMPSA8. ISSN 0022-5096 (print), 1873-4782 (electronic).

Greengard:2002:NVF

[GH02] Leslie F. Greengard and Jingfang Huang. A new version of the fast multipole method for screened Coulomb interactions in three dimensions. *Journal of Computational Physics*, 180(2):642–658, 2002. CODEN JCTPAH. ISSN 0021-9991 (print), 1090-2716 (electronic).

Ganesh:2008:HOT

[GH08] M. Ganesh and S. C. Hawkins. A high-order tangential basis algorithm for electromagnetic scattering by curved surfaces. *Journal of Computational Physics*, 227(9):4543–4562, 2008. CODEN JCTPAH. ISSN 0021-9991 (print), 1090-2716 (electronic).

Greengard:1998:AFM

[GHRW98] Leslie Greengard, Jingfang Huang, Vladimir Rokhlin, and Stephen Wandzura. Accelerating fast multipole methods for the Helmholtz equation at low frequencies. *IEEE Computational Science & Engineering*, 5(3): 32–38, July/September 1998. CODEN ISCEE4. ISSN 1070-9924 (print), 1558-190X (electronic). URL `http://dlib.computer.org/cs/books/cs1998/pdf/c3032.pdf`; `http://www.computer.org/cse/cs1998/c3032abs.htm`.

Gibson:2008:MME

[Gib08] Walton C. Gibson. *The method of moments in electromagnetics*. Chapman & Hall/CRC, Boca Raton, FL, 2008. ISBN 1-4200-6145-3. xvi + 272 pp.

Gerchikov:1998:EMP

[GIS98] L. G. Gerchikov, A. N. Ipatov, and A. V. Solov'yov. Excitation of multipole plasmon resonances in clusters by fast electron impact. *Journal of physics. B, Atomic, molecular, and optical physics: an Institute of Physics journal*, 31(13):3065–??, ???? 1998. CODEN JPAMA4. ISSN 0953-4075 (print), 1361-6455 (electronic).

Greengard:2004:IEM

[GK04] Leslie Greengard and Mary Catherine Kropinski. Integral equation methods for Stokes flow in doubly-periodic domains. *Journal of Engineering Mathematics*, 48(2):157–170, 2004. CODEN JLEMAU. ISSN

0022-0833 (print), 1573-2703 (electronic).

Ginste:2009:ECP

[GKD09] Dries Vande Ginste, Luc Knockaert, and Daniël De Zutter. Error control in the perfectly matched layer based multilevel fast multipole algorithm. *Journal of Computational Physics*, 228(13): 4811–4822, July 20, 2009. CODEN JCTPAH. ISSN 0021-9991 (print), 1090-2716 (electronic). URL http://www.sciencedirect.com/science/article/pii/S0021999109001661.

Greengard:1996:IEM

[GKM96] Leslie Greengard, Mary Catherine Kropinski, and Anita Mayo. Integral equation methods for Stokes flow and isotropic elasticity in the plane. *Journal of Computational Physics*, 125(2): 403–414, May 1996. CODEN JCTPAH. ISSN 0021-9991 (print), 1090-2716 (electronic). URL http://www.sciencedirect.com/science/article/pii/S0021999196901023.

Grama:1994:SPF

[GKS94] A. Y. Grama, V. Kumar, and A. Sameh. Scalable parallel formulations of the Barnes–Hut method for n-body simulations. In IEEE [IEE94c], pages 439–448. ISBN 0-8186-6605-6 (paper), 0-8186-6606-4 (microfiche), 0-8186-6607-2 (case). ISSN 1063-9535. LCCN QA76.5 .S894 1994. URL http://sc94.ameslab.gov/AP/contents.html. IEEE catalog number 94CH34819.

Grama:1998:SPF

[GKS98] Ananth Grama, Vipin Kumar, and Ahmed Sameh. Scalable parallel formulations of the Barnes–Hut method for n-body simulations. *Parallel Computing*, 24 (5–6):797–822, June 1, 1998. CODEN PACOEJ. ISSN 0167-8191 (print), 1872-7336 (electronic). URL http://www.elsevier.com/cas/tree/store/parco/sub/1998/24/5-6/1288.pdf.

Griebel:2007:NSM

[GKZ07] Michael Griebel, Stephan Knapek, and Gerhard Zumbusch. *Numerical simulation in molecular dynamics*, volume 5 of *Texts in Computational Science and Engineering*. Springer, Berlin, 2007. ISBN 3-540-68094-2. xii + 470 pp. Numerics, algorithms, parallelization, applications.

Greengard:1996:DAP

[GL96] Leslie Greengard and June-Yub Lee. A direct adaptive Poisson solver of arbitrary order accuracy. *Journal of Computational Physics*, 125(2):415–424, May 1996. CODEN JCTPAH. ISSN 0021-9991 (print), 1090-2716 (electronic). URL http:

//www.sciencedirect.com/science/article/pii/S0021999196901035.

Giraud:2006:PSL

[GLS06] L. Giraud, J. Langou, and G. Sylvand. On the parallel solution of large industrial wave propagation problems. *Journal of Computational Acoustics*, 14(1):83–111, 2006. ISSN 0218-396X.

Greengard:1994:NEE

[GM94] Leslie Greengard and Monique Moura. On the numerical evaluation of electrostatic fields in composite materials. In *Acta numerica, 1994*, Acta Numer., pages 379–410. Cambridge University Press, Cambridge, UK, 1994.

Gumerov:2010:CHR

[GODZ10] Nail A. Gumerov, Adam E. O'Donovan, Ramani Duraiswami, and Dmitry N. Zotkin. Computation of the head-related transfer function via the fast multipole accelerated boundary element method and its spherical harmonic representation. *Journal of the Acoustical Society of America*, 127(1):370–386, ???? 2010. CODEN JASMAN. ISSN 0001-4966.

Goedecker:1999:LSE

[Goe99] Stefan Goedecker. Linear scaling electronic structure methods. *Reviews of Modern Physics*, 71(4):1085–1123, July 1999. CODEN RMPHAT. ISSN 0034-6861 (print), 1538-4527 (electronic), 1539-0756. URL http://link.aps.org/doi/10.1103/RevModPhys.71.1085; http://rmp.aps.org/abstract/RMP/v71/i4/p1085_1.

Greengard:2021:FMM

[GORV21] Leslie Greengard, Michael O'Neil, Manas Rachh, and Felipe Vico. Fast multipole methods for the evaluation of layer potentials with locally-corrected quadratures. *Journal of Computational Physics: X*, 10:??, March 2021. CODEN JCPXAL. ISSN 2590-0552. URL http://www.sciencedirect.com/science/article/pii/S2590055221000093.

Griebel:1999:SGB

[GOS99] M. Griebel, P. Oswald, and T. Schiekofer. Sparse grids for boundary integral equations. *Numerische Mathematik*, 83(2):279–312, 1999. CODEN NUMMA7. ISSN 0029-599X (print), 0945-3245 (electronic).

Glosli:1993:FMM

[GP93] J. N. Glosli and M. R. Philpott. Fast multipole method in simulations of aqueous systems. In Halley and Blum [HB93], pages 80–89. ISBN 1-56677-052-1. LCCN QD551.S965 1992.

Grytsenko:2008:ACA

[GP08] T. Grytsenko and A. Peratta. Adaptive cross approximation based solver for boundary element method with single domain in 3D. In *Boundary elements and other mesh reduction methods XXX*, volume 47 of *WIT Trans. Model. Simul.*, pages 209–218. WIT Press, Southampton, 2008.

Greengard:1987:FAP

[GR87] L. Greengard and V. Rokhlin. A fast algorithm for particle simulations. *Journal of Computational Physics*, 73 (2):325–348, December 1987. CODEN JCTPAH. ISSN 0021-9991 (print), 1090-2716 (electronic). URL `http://www.sciencedirect.com/science/article/pii/0021999187901409`. This paper is credited as the origin of the fast multipole method, with an $O(N)$ algorithm. It was reprinted in the same journal, vol. 135, pp. 280–292, August 1997.

Greengard:1988:REPb

[GR88a] L. Greengard and V. Rokhlin. The rapid evaluation of potential fields in three dimensions. In Anderson and Greengard [AG88], pages 121–141. ISBN 0-387-50526-1 (New York), 3-540-50526-1 (Berlin). LCCN QA3 .L28 no. 1360.

Greengard:1988:EIF

[GR88b] Leslie Greengard and Vladimir Rokhlin. On the efficient implementation of the fast multipole algorithm. Technical Report TR-602 (or RR-602??), Yale University, New Haven, CT, USA, ???? 1988.

Greengard:1997:NVF

[GR97] Leslie Greengard and Vladimir Rokhlin. A new version of the Fast Multipole Method for the Laplace equation in three dimensions. *Acta Numerica*, 6:229–269, 1997. CODEN ANUMFU. ISBN 0-521-59106-6. ISSN 0962-4929 (print), 1474-0508 (electronic).

Gimbutas:2002:GFM

[GR02] Zydrunas Gimbutas and Vladimir Rokhlin. A generalized fast multipole method for nonoscillatory kernels. *SIAM Journal on Scientific Computing*, 24(3):796–817, 2002. CODEN SJOCE3. ISSN 1064-8275 (print), 1095-7197 (electronic).

Greengard:1987:REP

[Gre87] L. Greengard. *The Rapid Evaluation of Potential Fields in Particle Systems*. Ph.d. thesis, Yale University, New Haven, CT, USA, 1987. ???? pp. This thesis won an ACM Distinguished Dissertation Award, and was later published as a book [Gre88].

Greengard:1988:REPa

[Gre88] Leslie Greengard. *The rapid evaluation of potential fields* *in particle systems*. ACM distinguished dissertations. MIT Press, Cambridge, MA, USA, 1988. ISBN 0-262-07110-X. iv + 90 pp. LCCN QC20.7.P67 G74 1988.

Greengard:1990:PFC

[Gre90a] L. Greengard. Potential flow in channels. *SIAM Journal on Scientific and Statistical Computing*, 11(4):603–620, 1990. CODEN SIJCD4. ISSN 0196-5204.

Greengard:1990:NSB

[Gre90b] Leslie Greengard. The numerical solution of the n-body problem. *Computers in Physics*, 4(2):142–152, ???? 1990. CODEN CPHYE2. ISSN 0894-1866 (print), 1558-4208 (electronic).

Greengard:1994:FAC

[Gre94] Leslie Greengard. Fast algorithms for classical physics. *Science*, 265(5174):909–914, August 12, 1994. CODEN SCIEAS. ISSN 0036-8075 (print), 1095-9203 (electronic).

Ginste:2004:FMM

[GROZ04] Dries Vande Ginste, Hendrik Rogier, Frank Olyslager, and Daniël De Zutter. A fast multipole method for layered media based on the application of perfectly matched layers—the 2-D case. *IEEE Transactions on Antennas and Propagation*, 52(10):2631–2640, 2004. CODEN IETPAK. ISSN 0018-926x (print), 1558-2221 (electronic).

Greengard:1991:FGT

[GS91] Leslie Greengard and John Strain. The fast Gauss transform. *SIAM Journal on Scientific and Statistical Computing*, 12(1):79–94, January 1991. CODEN SIJCD4. ISSN 0196-5204.

Greengard:1998:NVF

[GS98a] Leslie Greengard and Xiaobai Sun. A new version of the Fast Gauss Transform. *Documenta Mathematica, Journal der Deutschen Mathematiker-Vereinigung*, Extra Volume ICM III:575–584, 1998. ISSN 1431-0635 (print), 1431-0643 (electronic). URL `http://www.emis.ams.org/journals/DMJDMV/xvol-icm/16/Greengard.MAN.html`.

Gyure:1998:PMH

[GS98b] Mark F. Gyure and Mark A. Stalzer. A prescription for the multilevel Helmholtz fast multipole method. *IEEE Computational Science & Engineering*, 5(3):39–47, July/September 1998. CODEN ISCEE4. ISSN 1070-9924 (print), 1558-190X (electronic). URL `http://dlib.computer.org/cs/books/cs1998/pdf/c3039.pdf`; `http://www.computer.org/cse/cs1998/c3039abs.htm`.

Geng:2001:FMM

[GSC01] Norbert Geng, Anders Sullivan, and Lawrence Carin. Fast multipole method for scattering from an arbitrary PEC target above or buried in a lossy half space. *IEEE Transactions on Antennas and Propagation*, 49(5):740–748, 2001. CODEN IETPAK. ISSN 0018-926x (print), 1558-2221 (electronic).

Grama:1998:IEB

[GSS98a] A. Grama, V. Sarin, and A. Sameh. Improving error bounds for multipole-based treecodes. In IEEE [IEE98], pages 73–80. ISBN 0-8186-9196-4 (casebound), 0-8186-9194-8, 0-8186-9197-2 (microfiche). LCCN QA76.88 .I575 1998. IEEE Computer Society Order Number PR09194. IEEE Order Plan Catalog Number 98EX238.

Grama:1998:PMD

[GSS98b] Ananth Grama, Vivek Sarin, and Ahmed Sameh. Piecewise multipoles for dense iterative solvers. In Mandel and Carey [MC92], page ?? ISBN ???? LCCN ???? URL `http://www.cs.purdue.edu/homes/sarin/Papers/CopperMtn_98/HTML_fmm/fmm_abstract_WWW.html`. Two volumes. Selected papers from the Fifth Copper Mountain Conference on Multigrid Methods, Colorado, April 1991.

Grama:2000:IEB

[GSS00] Ananth Grama, Vivek Sarin, and Ahmed Sameh. Improving error bounds for multipole-based treecodes. *SIAM Journal on Scientific Computing*, 21(5):1790–1803, September 2000. CODEN SJOCE3. ISSN 1064-8275 (print), 1095-7197 (electronic). URL `http://epubs.siam.org/sam-bin/dbq/article/33912`; `http://www.cs.purdue.edu/homes/sarin/Papers/CopperMtn_98/HTML_fmm_sisc/fmm_sisc_WWW.html`.

Guerel:1997:FRC

[Gue97] L. Guerel. Fast radar cross section (RCS) computation via the fast multipole method. In Anonymous [Ano97b], pages 6–?? ISBN 92-836-0039-8. LCCN TL500.N6 C6 no.583.

Guseinov:1998:AEM

[Gus98] I. I. Guseinov. Analytical evaluation of molecular electric and magnetic multipole moment integrals over Slater-type orbitals. *International Journal of Quantum Chemistry*, 68(3):145–150, June 5, 1998. CODEN IJQCB2. ISSN 0020-7608 (print), 1097-461X (electronic).

Greengard:1998:GEI

[GW98] Leslie Greengard and Stephen Wandzura. Guest Editor's introduction: Fast multipole methods. *IEEE Computational Science & Engineering*, 5(3):16–18, July/September 1998. CODEN ISCEE4. ISSN 1070-9924 (print), 1558-190X (electronic). URL http://dlib.computer.org/cs/books/cs1998/pdf/c3016.pdf.

Giese:2008:EAT

[GY08] Timothy J. Giese and Darrin M. York. Extension of adaptive tree code and fast multipole methods to high angular momentum particle charge densities. *Journal of Computational Chemistry*, 29(12):1895–1904, September 2008. CODEN JCCHDD. ISSN 0192-8651 (print), 1096-987X (electronic).

Hoft:2017:FUM

[HA17] Thomas A. Höft and Bradley K. Alpert. Fast updating multipole Coulombic potential calculation. *SIAM Journal on Scientific Computing*, 39(3): A1038–A1061, ???? 2017. CODEN SJOCE3. ISSN 1064-8275 (print), 1095-7197 (electronic).

Hamada:2011:GAI

[Ham11] Shoji Hamada. GPU-accelerated indirect boundary element method for voxel model analyses with fast multipole method. *Computer Physics Communications*, 182 (5):1162–1168, May 2011. CODEN CPHCBZ. ISSN 0010-4655 (print), 1879-2944 (electronic). URL http://www.sciencedirect.com/science/article/pii/S0010465511000403.

Hariharan:2002:SPF

[HAS02] Bhanu Hariharan, Srinivas Aluru, and Balasubramaniam Shanker. A scalable parallel fast multipole method for analysis of scattering from perfect electrically conducting surfaces. In IEEE [IEE02], page ?? ISBN 0-7695-1524-X. LCCN ???? URL http://www.sc-2002.org/paperpdfs/pap.pap295.pdf.

Have:2003:PIF

[Hav03] Pascal Havé. A parallel implementation of the fast multipole method for Maxwell's equations. *International Journal for Numerical Methods in Fluids*, 43(8):839–864, 2003. CODEN IJNFDW. ISSN 0271-2091 (print), 1097-0363 (electronic). ECCOMAS Computational Fluid Dynamics Conference, Part III (Swansea, 2001).

Halley:1993:PSM

[HB93] J. W. (James Woods) Halley and L. (Lesser) Blum, editors. *Proceedings of the Symposium on Microscopic Models of Electrode-Electrolyte Interfaces. October 1992, Toronto, ON, Canada*, volume 93-5 of *Proceedings — Electrochemical Society*. Electrochemical Society, Pennington, NJ,

USA, 1993. ISBN 1-56677-052-1. LCCN QD551.S965 1992.

He:2008:DVT

[HC08] B. He and W. C. Chew. Diagonalizations of vector and tensor addition theorems. *Communications in Computational Physics*, 4(4):797–819, 2008. ISSN 1815-2406 (print), 1991-7120 (electronic).

Hesford:2010:FIS

[HC10] Andrew J. Hesford and Weng C. Chew. Fast inverse scattering solutions using the distorted Born iterative method and the multilevel fast multipole algorithm. *Journal of the Acoustical Society of America*, 128(2):679–690, ???? 2010. CODEN JASMAN. ISSN 0001-4966.

Higham:2015:PCA

[HDG+15] Nicholas J. Higham, Mark R. Dennis, Paul Glendinning, Paul A. Martin, Fadil Santosa, and Jared Tanner, editors. *The Princeton Companion to Applied Mathematics*. Princeton University Press, Princeton, NJ, USA, 2015. ISBN 0-691-15039-7 (hardcover). 994 (est.) pp. LCCN QA155 .P75 2015. URL `http://press.princeton.edu/titles/10592.html`.

Hockney:1988:CSU

[HE88] R. W. Hockney and J. W. Eastwood. *Computer Simulation Using Particles*. Adam Hilger Ltd., Bristol, UK, 1988. ISBN 0-85274-392-0. xxi + 540 pp. LCCN QA76.9.C65 H63 1988.

Holm:2014:DAA

[HEGH14] Marcus Holm, Stefan Engblom, Anders Goude, and Sverker Holmgren. Dynamic autotuning of adaptive fast multipole methods on hybrid multicore CPU and GPU systems. *SIAM Journal on Scientific Computing*, 36(4): C376–C399, ???? 2014. CODEN SJOCE3. ISSN 1064-8275 (print), 1095-7197 (electronic).

Hinsen:1992:RDE

[HF92] K. Hinsen and B. U. Felderhof. Reduced description of electric multipole potential in Cartesian coordinates. *Journal of Mathematical Physics*, 33(11):3731–3735, November 1992. CODEN JMAPAQ. ISSN 0022-2488 (print), 1089-7658 (electronic), 1527-2427.

Hamada:1998:PPS

[HFKM98] T. Hamada, T. Fukushige, A. Kawai, and J. Makino. PROGRAPE-1: a programmable special-purpose computer for many-body simulations. In IEEE, editor, *Proceedings of the IEEE Symposium on FPGAs for Custom Computing Machines, 1998*, pages 256–257. IEEE Computer Society Press, 1109 Spring Street, Suite 300, Silver Spring, MD 20910, USA, 1998.

Hu:2011:SFM

[HGD11] Qi Hu, Nail A. Gumerov, and Ramani Duraiswami. Scalable fast multipole methods on distributed heterogeneous architectures. In Lathrop et al. [LCK11], pages 36:1–36:12. ISBN 1-4503-0771-X. LCCN ????

Heller:1990:MDS

[HGS90] Helmut Heller, H. Grubmuller, and Klaus Schulten. Molecular dynamics simulation on a parallel computer. *Molecular simulation*, 5(??): 133–165, ???? 1990. CODEN MOSIEA. ISSN 0892-7022 (print), 1029-0435 (electronic).

Handley:2009:OCF

[HHKP09] Chris M. Handley, Glenn I. Hawe, Douglas B. Kell, and Paul L. A. Popelier. Optimal construction of a fast and accurate polarisable water potential based on multipole moments trained by machine learning. *Physical Chemistry Chemical Physics: PCCP*, 11 (30):6365–6376, August 14, 2009. CODEN PPCPFQ. ISSN 1463-9076 (print), 1463-9084 (electronic).

Hu:2021:FMB

[HHL+21] Bin Hu, Zongjun Hu, Cong Li, Zhongrong Niu, and Xiaobao Li. A fast multipole boundary element method based on higher order elements for analyzing 2-d potential problems. *Computers and Mathematics with Applications*, 87(??):65–76, April 1, 2021. CODEN CMAPDK. ISSN 0898-1221 (print), 1873-7668 (electronic). URL `http://www.sciencedirect.com/science/article/pii/S089812212100050X`.

Huang:2019:ALS

[HHM19] Libo Huang, Torsten Hädrich, and Dominik L. Michels. On the accurate large-scale simulation of ferrofluids. *ACM Transactions on Graphics*, 38(4):93:1–93:15, July 2019. CODEN ATGRDF. ISSN 0730-0301 (print), 1557-7368 (electronic).

Hu:1996:DPI

[HJ96] Yu Hu and S. Lennart Johnsson. A data-parallel implementation of hierarchical N-body methods. *The International Journal of Supercomputer Applications and High Performance Computing*, 10 (1):3–40, Spring 1996. CODEN IJSCFG. ISSN 1078-3482.

Huang:2009:FYA

[HJZ09] Jingfang Huang, Jun Jia, and Bo Zhang. FMM–Yukawa: An adaptive fast multipole method for screened Coulomb interactions. *Computer Physics Communications*, 180 (11):2331–2338, November

2009. CODEN CPHCBZ. ISSN 0010-4655 (print), 1879-2944 (electronic). URL http://www.sciencedirect.com/science/article/pii/S0010465509002082.

Harbrecht:2005:WGB

[HKS05] H. Harbrecht, U. Kähler, and R. Schneider. Wavelet Galerkin BEM on unstructured meshes. *Computing and Visualization in Science*, 8(3-4):189–199, 2005. ISSN 1432-9360 (print), 1433-0369 (electronic).

Herbordt:2015:LLG

[HL15] Martin Herbordt and Miriam Leeser. Off-loading LET generation to PEACH2: a switching hub for high performance GPU clusters. *ACM SIGARCH Computer Architecture News*, 43(4):3–8, September 2015. CODEN CANED2. ISSN 0163-5964 (print), 1943-5851 (electronic).

He:2008:FES

[HLL08] Xuefei He, Kian Meng Lim, and Siak Piang Lim. A fast elastostatic solver based on fast Fourier transform on multipoles (FFTM). *International Journal for Numerical Methods in Engineering*, 76(8):1231–1249, 2008. CODEN IJNMBH. ISSN 0029-5981 (print), 1097-0207 (electronic).

Huang:2018:IEC

[HLL+18] He Huang, Li-Shi Luo, Rui Li, Jie Chen, and He Zhang. Improve the efficiency of the Cartesian tensor based fast multipole method for Coulomb interaction using the traces. *Journal of Computational Physics*, 371(??):122–136, October 15, 2018. CODEN JCTPAH. ISSN 0021-9991 (print), 1090-2716 (electronic). URL http://www.sciencedirect.com/science/article/pii/S0021999118303280.

Hu:2024:NML

[HLN24] Bin Hu, Cong Li, and Zhongrong Niu. A new multi-level strategy of numerical integration in the fast multipole BEM for analyzing 3D potential problems. *Computers and Mathematics with Applications*, 161(??):174–189, May 1, 2024. CODEN CMAPDK. ISSN 0898-1221 (print), 1873-7668 (electronic). URL http://www.sciencedirect.com/science/article/pii/S0898122124000920.

Hut:1986:USS

[HM86] Piet Hut and S. (Stephen) McMillan, editors. *The Use of Supercomputers in Stellar Dynamics: Proceedings of a Workshop Held at the Institute For Advanced Study, Princeton, USA, June 2–4, 1986*, volume 267 of *Lecture notes in physics*. Springer-Verlag, Berlin, Germany /

Heidelberg, Germany / London, UK / etc., 1986. ISBN 0-387-17196-7 (US). LCCN QB807 .U74 1986.

Hamilton:1995:RGM

[HM95] John T. Hamilton and George Majda. On the Rokhlin–Greengard method with vortex blobs for problems posed in all space or periodic in one direction. *Journal of Computational Physics*, 121 (1):29–50, October 1, 1995. CODEN JCTPAH. ISSN 0021-9991 (print), 1090-2716 (electronic). URL `http://www.sciencedirect.com/science/article/pii/S0021999185711771`.

Hamada:2010:TAB

[HN10] T. Hamada and K. Nitadori. 190 Tflops astrophysical n-body simulation on a cluster of GPUs. In *Proceedings of the 2010 ACM/IEEE International Conference for High Performance Computing Networking, Storage and Analysis at SC'10*, pages 1–9. ACM Press, New York, NY 10036, USA, 2010.

Houzaki:2006:FPR

[HNO06] Kenji Houzaki, Naoshi Nishimura, and Yoshihiro Otani. An FMM for periodic rigid-inclusion problems and its application to homogenisation. In *Inverse problems, multi-scale analysis and effective medium theory*, volume 408 of *Contemp. Math.*, pages 81–98. Amer. Math. Soc., Providence, RI, 2006.

Hamada:2009:THB

[HNY+09] T. Hamada, T. Narumi, R. Yokota, K. Yasuoka, K. Nitadori, and M. Taiji. 42 Tflops hierarchical n-body simulations on GPUs with applications in both astrophysics and turbulence. In *Proceedings of the Conference on High Performance Computing Networking, Storage and Analysis at SC '09*, page 62:1?62:12. ACM Press, New York, NY 10036, USA, 2009.

Hollingsworth:2012:SPI

[Hol12] Jeffrey Hollingsworth, editor. *SC '12: Proceedings of the International Conference on High Performance Computing, Networking, Storage and Analysis, Salt Lake Convention Center, Salt Lake City, UT, USA, November 10–16, 2012*. IEEE Computer Society Press, 1109 Spring Street, Suite 300, Silver Spring, MD 20910, USA, 2012. ISBN 1-4673-0804-8.

Hamilton:1995:FMM

[HOST95] L. R. Hamilton, J. J. Ottusch, M. A. Stalzer, and R. S. Turley. The fast multipole method for large 2nd scatterers (invited paper). In Anonymous [Ano95b], pages 606–613.

Hendrickson:1995:PMB

[HP95] Bruce Hendrickson and Steve Plimpton. Parallel many-body simulations without all-to-all communication. *Journal of Parallel and Distributed Computing*, 27(1):15–25, May 1995. CODEN JPDCER. ISSN 0743-7315 (print), 1096-0848 (electronic). URL http://www.idealibrary.com/links/doi/10.1006/jpdc.1995.1068/production; http://www.idealibrary.com/links/doi/10.1006/jpdc.1995.1068/production/pdf.

Hrycak:1998:IFM

[HR98] Tomasz Hrycak and Vladimir Rokhlin. An improved fast multipole algorithm for potential fields. *SIAM Journal on Scientific Computing*, 19(6):1804–1826, 1998. CODEN SJOCE3. ISSN 1064-8275 (print), 1095-7197 (electronic).

Holt:1995:HBM

[HS95] Chris Holt and Jaswinder Pal Singh. Hierarchical n-body methods on shared address space multiprocessors. In Bailey et al. [B+95], pages 313–318. ISBN 0-89871-344-7. LCCN QA76.58.S55 1995.

Hanninen:2008:EER

[HS08] Ilari Hänninen and Jukka Sarvas. Efficient evaluation of the Rokhlin translator in multilevel fast multipole algorithm. *IEEE Transactions on Antennas and Propagation*, 56(8, part 1):2356–2362, 2008. CODEN IETPAK. ISSN 0018-926x (print), 1558-2221 (electronic).

Hanrahan:1991:RHR

[HSA91] Pat Hanrahan, David Salzman, and Larry Aupperle. A rapid hierarchical radiosity algorithm. *Computer Graphics*, 25(4):197–206, July 1991. CODEN CGRADI, CPGPBZ. ISSN 0097-8930 (print), 1558-4569 (electronic). URL http://www.acm.org:80/pubs/citations/proceedings/graph/122718/p197-hanrahan/.

Heath:1997:PES

[HTA+97] Michael Heath, Virginia Torczon, Greg Astfalk, Petter E. Bjørstad, Alan H. Karp, Charles H. Koelbel, Vipin Kumar, Robert F. Lucas, Layne T. Watson, and David E. Womble, editors. *Proceedings of the Eighth SIAM Conference on Parallel Processing for Scientific Computing. Held in Minneapolis, MN, March 14–17, 1997*. Society for Industrial and Applied Mathematics, Philadelphia, PA, USA, 1997. CODEN PSSCFK. ISBN 0-89871-395-1. LCCN ???? CD-ROM for Windows, Macintosh and UNIX; no paper form published.

Ho:2002:SBP

[HTG02] Dac Phuong Ho, Yong Meng Teo, and Johan Prawira Gozali. Solving the N-body problem with the ALiCE Grid System. *Lecture Notes in Computer Science*, 2550:87–??, 2002. CODEN LNCSD9. ISSN 0302-9743 (print), 1611-3349 (electronic). URL http://link.springer.de/link/service/series/0558/bibs/2550/25500087.htm; http://link.springer.de/link/service/series/0558/papers/2550/25500087.pdf.

Hoyler:1997:FMM

[HU97] G. Hoyler and R. Unbehauen. The fast multipole method for EMC problems. *Electrical Engineering (American Institute of Electrical Engineers)*, 80 (??):403–411, ???? 1997. CODEN ELENAC. ISSN 0095-9197.

Hesford:2010:FMM

[HW10] Andrew J. Hesford and Robert C. Waag. The fast multipole method and Fourier convolution for the solution of acoustic scattering on regular volumetric grids. *Journal of Computational Physics*, 229(21):8199–8210, October 20, 2010. CODEN JCTPAH. ISSN 0021-9991 (print), 1090-2716 (electronic). URL http://www.sciencedirect.com/science/article/pii/S0021999110004183.

Hesford:2011:RRA

[HW11] Andrew J. Hesford and Robert C. Waag. Reduced-rank approximations to the far-field transform in the gridded fast multipole method. *Journal of Computational Physics*, 230(10):3656–3667, May 10, 2011. CODEN JCTPAH. ISSN 0021-9991 (print), 1090-2716 (electronic). URL http://www.sciencedirect.com/science/article/pii/S0021999111001057.

Huang:2021:HHP

[HXC21] Hua Huang, Xin Xing, and Edmond Chow. H2Pack: High-performance H^2 matrix package for kernel matrices using the proxy point method. *ACM Transactions on Mathematical Software*, 47 (1):3:1–3:29, January 2021. CODEN ACMSCU. ISSN 0098-3500 (print), 1557-7295 (electronic). URL https://dl.acm.org/doi/10.1145/3412850.

He:2021:EPM

[HYS21] Wei-Jia He, Ming-Lin Yang, and Xin-Qing Sheng. Efficient parallelization of multilevel fast multipole algorithm for electromagnetic simulation on many-core SW26010 processor. *The Journal of Supercomputing*, 77(2):1502–1516, February 2021. CODEN JOSUED. ISSN 0920-8542 (print), 1573-0484 (electronic). URL https://link.

springer.com/article/10.1007/s11227-020-03308-9.

Yao:2008:IFM

[hYtWbWL08] Zhen han Yao, Hai tao Wang, Peng bo Wang, and Ting Lei. Investigations on fast multipole BEM in solid mechanics. *Journal of University of Science and Technology of China. Zhongguo Kexue Jishu Daxue Xuebao*, 38(1):1–17, 2008. CODEN CKHPD7. ISSN 0253-2778.

Huang:2018:HPH

[HZH+18] Tian Huang, Yongxin Zhu, Yajun Ha, Xu Wang, and Meikang Qiu. A hardware pipeline with high energy and resource efficiency for FMM acceleration. *ACM Transactions on Embedded Computing Systems*, 17(2):51:1–51:??, April 2018. CODEN ???? ISSN 1539-9087 (print), 1558-3465 (electronic).

Ichiki:2002:ISD

[Ich02] Kengo Ichiki. Improvement of the Stokesian dynamics method for systems with a finite number of particles. *Journal of Fluid Mechanics*, 452:231–262, 2002. CODEN JFLSA7. ISSN 0022-1120 (print), 1469-7645 (electronic).

IEEE:1990:PSN

[IEE90] IEEE, editor. *Proceedings, Supercomputing '90: November 12–16, 1990, New York Hilton at Rockefeller Center, New York, New York*. IEEE Computer Society Press, 1109 Spring Street, Suite 300, Silver Spring, MD 20910, USA, 1990. ISBN 0-8186-2056-0 (paperback) (IEEE Computer Society), 0-89791-412-0 (paperback) (ACM). LCCN QA 76.88 S87 1990. ACM order number 415903. IEEE Computer Society Press order number 2056. IEEE catalog number 90CH2916-5.

IEEE:1992:ASF

[IEE92a] IEEE, editor. *33rd Annual Symposium on Foundations of Computer Science: October 24–27, 1992, Pittsburgh, Pennsylvania: proceedings [papers]*. IEEE Computer Society Press, 1109 Spring Street, Suite 300, Silver Spring, MD 20910, USA, 1992. CODEN ASFPDV. ISBN 0-8186-2901-0 (microfiche), 0-8186-2900-2 (paperback). ISSN 0272-5428. LCCN QA 76 S979 1992. IEEE Catalog Number 92CH3188-0. IEEE Computer Society Press Order Number 2900.

IEEE:1992:PSM

[IEE92b] IEEE Computer Society.Technical Committee on Computer Architecture, editor. *Proceedings, Supercomputing '92: Minneapolis, Minnesota, November 16–20, 1992*. IEEE Computer Society Press, 1109 Spring Street, Suite 300, Silver Spring, MD 20910, USA, 1992. ISBN 0-8186-2632-1 (case), 0-8186-2630-5 (paper), 0-8186-2631-3 (microfiche), 0-89791-537-2 (ACM Library series). LCCN QA76.5 .S894 1992. Cover title: Supercomputing '91. ACM order number 415922. IEEE Computer Society Press order number 2630 IEEE catalog number 92CH3216-9.

IEEE:1993:PSP

[IEE93] IEEE, editor. *Proceedings, Supercomputing '93: Portland, Oregon, November 15–19, 1993*. IEEE Computer Society Press, 1109 Spring Street, Suite 300, Silver Spring, MD 20910, USA, 1993. ISBN 0-8186-4340-4 (paperback), 0-8186-4341-2 (microfiche), 0-8186-4342-0 (hardback), 0-8186-4346-3 (CD-ROM). ISSN 1063-9535. LCCN QA76.5 .S96 1993.

IEEE:1994:IAP

[IEE94a] IEEE, editor. *IEEE Antennas and Propagation International Symposium, 1994: 1994 international symposium digest: antennas and propagation: the University of Washington, Seattle, Washington, June 19–24, 1994*, International Symposium Digest Antennas and Propagation. IEEE Computer Society Press, 1109 Spring Street, Suite 300, Silver Spring, MD 20910, USA, 1994. ISBN 0-7803-2010-7, 0-7803-2009-3, 0-7803-2011-5. ISSN 1064-3125. LCCN TK7871.6 .A55823 1994. Three volumes.

IEEE:1994:PSH

[IEE94b] IEEE, editor. *Proceedings of the Scalable High-Performance Computing Conference, May 23–25, 1994, Knoxville, Tennessee*. IEEE Computer Society Press, 1109 Spring Street, Suite 300, Silver Spring, MD 20910, USA, 1994. ISBN 0-8186-5680-8 (paper), 0-8186-5681-6 (microfiche). LCCN QA76.58 .S32 1994. IEEE catalog number 94TH0637-9.

IEEE:1994:PSW

[IEE94c] IEEE, editor. *Proceedings, Supercomputing '94: Washington, DC, November 14–18, 1994*, Supercomputing. IEEE Computer Society Press, 1109 Spring Street, Suite 300, Silver Spring, MD 20910, USA, 1994. ISBN 0-8186-6605-6 (paper), 0-8186-6606-4 (microfiche), 0-8186-6607-2 (case). ISSN 1063-9535. LCCN QA76.5 .S894 1994. URL `http://sc94.ameslab.gov/AP/contents.html`. IEEE catalog number 94CH34819.

IEEE:1995:IAP

[IEE95] IEEE, editor. *IEEE Antennas and Propagation Society International Symposium: 1995 digest, June 18–June 23, 1995, Newport Beach, California*, volume 2–3. IEEE

Computer Society Press, 1109 Spring Street, Suite 300, Silver Spring, MD 20910, USA, 1995. ISBN 0-7803-2720-9. LCCN TK 7871.6 A2 1995. Four volumes. IEEE catalog number: 95CH35814.

IEEE:1996:IAP

[IEE96a] IEEE, editor. *IEEE Antennas and Propagation Society International Symposium: 1996 digest, July 21–26, 1996, Baltimore, Maryland*, IEEE Antennas and Propagation Society International Symposium. IEEE Computer Society Press, 1109 Spring Street, Suite 300, Silver Spring, MD 20910, USA, 1996. ISBN 0-7803-3217-2 (casebound), 0-7803-3216-4 (softbound), 0-7803-3218-0 (microfiche). LCCN TK7871.6.A68 1996. Three volumes.

IEEE:1996:PFI

[IEE96b] IEEE, editor. *Proceedings of the Fifth IEEE International Symposium on High Performance Distributed Computing, August 6–9, 1996, Syracuse, New York*. IEEE Computer Society Press, 1109 Spring Street, Suite 300, Silver Spring, MD 20910, USA, 1996. ISBN 0-8186-7582-9. LCCN QA76.88.I52 1996. IEEE order plan catalog number 96TB100069. EEE Computer Society Press order number PR07582.

IEEE:1996:PSM

[IEE96c] IEEE, editor. *Proceedings. Second MPI Developer's Conference: Notre Dame, IN, USA, 1–2 July 1996*. IEEE Computer Society Press, 1109 Spring Street, Suite 300, Silver Spring, MD 20910, USA, 1996. ISBN 0-8186-7533-0. LCCN QA76.642 .M67 1996.

IEEE:1997:IAP

[IEE97] IEEE, editor. *IEEE Antennas and Propagation Society International Symposium 1997: digest. Queen Elizabeth Hotel, Montréal, Canada, July 13–18, 1997*, IEEE Antennas and Propagation Society International Symposium. IEEE Computer Society Press, 1109 Spring Street, Suite 300, Silver Spring, MD 20910, USA, 1997. ISBN 0-7803-4179-1, 0-7803-4178-3, 0-7803-4180-5, 0-7803-4181-3. LCCN TK7871.6.I39 1997. Four volumes. IEEE catalog number: 97CH36122.

IEEE:1998:FIC

[IEE98] IEEE, editor. *Fifth International Conference on High Performance Computing: proceedings: December 17–20, 1998, Chennai (Madras) India*. IEEE Computer Society Press, 1109 Spring Street, Suite 300, Silver Spring, MD 20910, USA, 1998. ISBN 0-8186-9196-4 (casebound), 0-8186-9194-8, 0-8186-9197-2 (microfiche).

LCCN QA76.88 .I575 1998. IEEE Computer Society Order Number PR09194. IEEE Order Plan Catalog Number 98EX238.

IEEE:2002:STI

[IEE02] IEEE, editor. *SC2002: From Terabytes to Insight. Proceedings of the IEEE ACM SC 2002 Conference, November 16–22, 2002, Baltimore, MD, USA*. IEEE Computer Society Press, 1109 Spring Street, Suite 300, Silver Spring, MD 20910, USA, 2002. ISBN 0-7695-1524-X. LCCN ????

Ishiyama:2009:GMP

[IFM09] T. Ishiyama, T. Fukushige, and J. Makino. GreeM: Massively parallel TreePM code for large cosmological N-body simulations. *Publications of the Astronomical Society of Japan*, 61(??):1319–1330, December 2009. CODEN PASJAC. ISSN 0004-6264.

Izaguirre:2005:PMS

[IHM05] Jesús A. Izaguirre, Scott S. Hampton, and Thierry Matthey. Parallel multigrid summation for the N-body problem. *Journal of Parallel and Distributed Computing*, 65(8): 949–962, August 2005. CODEN JPDCER. ISSN 0743-7315 (print), 1096-0848 (electronic).

Iwasawa:2020:IPB

[INS+20] Masaki Iwasawa, Daisuke Namekata, Ryo Sakamoto, Takashi Nakamura, Yasuyuki Kimura, Keigo Nitadori, Long Wang, Miyuki Tsubouchi, Jun Makino, Zhao Liu, Haohuan Fu, and Guangwen Yang. Implementation and performance of Barnes–Hut n-body algorithm on extreme-scale heterogeneous many-core architectures. *The International Journal of High Performance Computing Applications*, 34 (6):615–628, November 1, 2020. CODEN IHPCFL. ISSN 1094-3420 (print), 1741-2846 (electronic). URL `https://journals.sagepub.com/doi/full/10.1177/1094342020943652`.

Iserles:1997:AN

[Ise97] A. Iserles, editor. *Acta numerica. 1997*, volume 6 of *Acta Numerica*. Cambridge University Press, Cambridge, UK, 1997. ISBN 0-521-59106-6. iv + 551 pp.

Ibeid:2016:PMC

[IYK16] Huda Ibeid, Rio Yokota, and David Keyes. A performance model for the communication in fast multipole methods on high-performance computing platforms. *The International Journal of High Performance Computing Applications*, 30(4):423–437, November 2016. CODEN IHPCFL. ISSN 1094-3420 (print), 1741-2846 (electronic).

Yoshida:2002:NFM

[iYNK02] Ken ichi Yoshida, Naoshi Nishimura, and Shoichi Kobayashi. A new fast multipole boundary integral equation method in elastostatic crack problems in 3D. In *Mathematical modeling and numerical simulation in continuum mechanics (Yamaguchi, 2000)*, volume 19 of *Lect. Notes Comput. Sci. Eng.*, pages 271–287. Springer-Verlag, Berlin, Germany / Heidelberg, Germany / London, UK / etc., 2002.

Jaramillo-Botero:2002:UFM

[JBL02] Andrés Jaramillo-Botero and Alfons Crespo I. Lorente. A unified formulation for massively parallel rigid multibody dynamics of $O(log_2n)$ computational complexity. *Journal of Parallel and Distributed Computing*, 62(6):1001–1020, June 1, 2002. CODEN JPDCER. ISSN 0743-7315 (print), 1096-0848 (electronic). URL http://www.idealibrary.com/links/doi/10.1006/jpdc.2001.1820; http://www.idealibrary.com/links/doi/10.1006/jpdc.2001.1820/pdf; http://www.idealibrary.com/links/doi/10.1006/jpdc.2001.1820/ref.

Jandhyala:1998:FAA

[JBMC98] Vikram Jandhyala, Shanker Balasubramaniam, Eric Michielssen, and Weng C. Chew. Fast algorithm for the analysis of scattering by dielectric rough surfaces. *Journal of the Optical Society of America. A, Optics, image science, and vision*, 15 (7):1877–1885, 1998. CODEN JOAOD6. ISSN 1084-7529, 0740-3232.

Jiang:2004:NCE

[JC04] L. J. Jiang and W. C. Chew. A new capacitance extraction method. *Journal of Electromagnetic Waves and Applications*, 18(3):287–299, 2004. CODEN JEWAE5. ISSN 0920-5071 (print), 1569-3937 (electronic).

Jansen:2018:TCC

[JdR+18] O. Jansen, E. d'Humières, X. Ribeyre, S. Jequier, and V. T. Tikhonchuk. Tree code for collision detection of large numbers of particles applied to the Breit–Wheeler process. *Journal of Computational Physics*, 355 (??):582–596, February 15, 2018. CODEN JCTPAH. ISSN 0021-9991 (print), 1090-2716 (electronic). URL http://www.sciencedirect.com/science/article/pii/S0021999117308598.

Jia:2008:KDC

[JH08] Jun Jia and Jingfang Huang. Krylov deferred correction accelerated method of lines transpose for parabolic problems. *Journal of Computational Physics*, 227(3):1739–1753, 2008. CODEN JCTPAH. ISSN 0021-9991 (print), 1090-2716 (electronic).

Jeon:2008:PTC

[JKCGJ08] Byoungseon Jeon, Joel D. Kress, Lee A. Collins, and Niels Grønbech-Jensen. Parallel TREE code for two-component ultracold plasma analysis. *Computer Physics Communications*, 178(4):272–279, February 15, 2008. CODEN CPHCBZ. ISSN 0010-4655 (print), 1879-2944 (electronic). URL http://www.sciencedirect.com/science/article/pii/S0010465507004171.

Jandhyala:1998:CSD

[JMBC98] V. Jandhyala, E. Michielssen, S. Balasubramaniam, and W. C. Chew. A combined steepest descent-fast multipole algorithm for the fast analysis of three-dimensional scattering by rough surfaces. *IEEE Transactions on Geoscience and Remote Sensing*, 36(3):738–748, ???? 1998. CODEN IGRSD2. ISSN 0196-2892 (print), 1558-0644 (electronic).

Jandhyala:1997:HFS

[JMC97] V. Jandhyala, E. Michielssen, and W. C. Chew. A hybrid fast steepest descent — multipole algorithm for analyzing 3-D scattering from rough surfaces. In Anonymous [Ano97a], pages 974–980. AD Reports -NTIS- AD A 1997; AD-A329118.

Jernigan:1989:TCL

[JP89] J. Garrett Jernigan and David H. Porter. A tree code with logarithmic reduction of force terms, hierarchical regularization of all variables, and explicit accuracy controls. *Astrophysical Journal. Supplement Series*, 71(??):871–893, December 1989. CODEN APJSA2. ISSN 0067-0049 (print), 1538-4365 (electronic).

Kaxiras:1996:MTS

[K+96] Efthimios Kaxiras et al., editors. *Materials theory, simulations, and parallel algorithms: symposium held November 27–December 1, 1995, Boston, Massachusetts, USA*, volume 408 of *Materials Research Society Symposium Proceedings*. Materials Research Society, Pittsburgh, PA, USA, 1996. ISBN 1-55899-311-8. ISSN 0272-9172 (print), 1946-4274 (electronic). LCCN TA404.23 .M38 1996.

Kutteh:1995:GFM

[KAN95] R. Kutteh, E. Apra, and J. Nichols. A generalized fast multipole approach for Hartree–Fock and density functional computations. *Chemical Physics Letters*, 238 (1–3):173–??, ???? 1995. CODEN CHPLBC. ISSN 0009-2614 (print), 1873-4448 (electronic).

Kutteh:1996:RCG

[KAN96] R. Kutteh, E. Apra, and J. Nichols. Reply to comment on “A generalized fast multipole approach for Hartree–Fock and density functional computations”. *Chemical Physics Letters*, 248(5–6): 484–485, ???? 1996. CODEN CHPLBC. ISSN 0009-2614 (print), 1873-4448 (electronic).

Kantardjiev:2015:SNU

[Kan15] Alexander A. Kantardjiev. Software news and updates: irGPU.proton.Net: Irregular strong charge interaction networks of protonatable groups in protein molecules — a GPU solver using the fast multipole method and statistical thermodynamics. *Journal of Computational Chemistry*, 36 (9):689–693, April 5, 2015. CODEN JCCHDD. ISSN 0192-8651 (print), 1096-987X (electronic).

Karin:1995:PAI

[Kar95] Sidney Karin, editor. *Proceedings of the 1995 ACM/IEEE Supercomputing Conference, December 3–8, 1995, San Diego Convention Center, San Diego, CA, USA*. ACM Press and IEEE Computer Society Press, New York, NY 10036, USA and 1109 Spring Street, Suite 300, Silver Spring, MD 20910, USA, 1995. ISBN 0-89791-816-9. LCCN ???? URL `http://www.supercomp.org/sc95/proceedings/`. These proceedings are not available in printed form. However, they are available on the World Wide Web, and on CD-ROM, available from ACM (ACM Press order number 415952) and IEEE (IEEE Computer Society Press order number FW07435).

Katzenelson:1989:CSB

[Kat89] Jacob Katzenelson. Computational structure of the N-body problem. *SIAM Journal on Scientific and Statistical Computing*, 10(4):787–815, July 1989. CODEN SIJCD4. ISSN 0196-5204.

Kybic:2005:FMA

[KCF+05] Jan Kybic, Maureen Clerc, Olivier Faugeras, Renaud Keriven, and Tho Papadopoulo. Fast multipole acceleration of the MEG/EEG boundary element method. *Physics in Medicine and Biology*, 50(19): 4695–4710, ???? 2005. CODEN PHMBA7. ISSN 0031-9155 (print), 1361-6560 (electronic).

Kawai:1999:MAB

[KFM99] Atsushi Kawai, Toshiyuki Fukushige, and Junichiro Makino. \$7.3/Mflops astrophysical N-body simulation with treecode on GRAPE-5. In ACM [ACM99], page ??

Kawai:2000:GSP

[KFMT00] A. Kawai, T. Fukushige, J. Makino, and M. Taiji. GRAPE-5: a special-purpose computer for N-body simulations. *Publications of the Astronomical Society of Japan*, 52(??):659–676, August 2000. CODEN PASJAC. ISSN 0004-6264.

Kartashev:1988:SPI

[KK88] Svetlana P. Kartashev and Steven I. Kartashev, editors. *Supercomputing '88: proceedings / ICS 88, Third International Conference on Supercomputing*. International Supercomputing Institute, Inc., St. Petersburg, FL, USA, 1988. LCCN QA 76.88 I58 1988. Three volumes. Spine title: ICS 88, Third International Conference on Supercomputing. Contents: v. 1. Supercomputing projects, applications, and artificial intelligence — v. 2. Technology assessment, industrial supercomputer outlooks, European supercomputing accomplishments, and performance and computations — v. 3. Supercomputer design, hardware and software.

Krishnan:1995:PAF

[KK95] S. Krishnan and L. V. Kale. A parallel adaptive fast multipole algorithm for n-body problems. *Proceedings of the International Conference on Parallel Processing*, ??(??):III, ???? 1995. CODEN PCPADL. ISSN 0190-3918.

Kozynchenko:2016:IAE

[KK16] Alexander I. Kozynchenko and Sergey A. Kozynchenko. On improving the algorithm efficiency in the particle–particle force calculations. *Journal of Computational Physics*, 320(??):40–45, September 1, 2016. CODEN JCTPAH. ISSN 0021-9991 (print), 1090-2716 (electronic). URL http://www.sciencedirect.com/science/article/pii/S0021999116301747.

Kohnke:2021:CFM

[KKB+21] Bartosz Kohnke, Carsten Kutzner, Andreas Beckmann, Gert Lube, Ivo Kabadshow, Holger Dachsel, and Helmut Grubmüller. A CUDA fast multipole method with highly efficient M2L far field evaluation. *The International Journal of High Performance Computing Applications*, 35 (1):97–117, January 1, 2021. CODEN IHPCFL. ISSN 1094-3420 (print), 1741-2846 (electronic). URL https://journals.sagepub.com/doi/full/10.1177/1094342020964857.

Kan:2023:GPI

[KKLZ23] Yi-Kai Kan, Franz X. Kärtner, Sabine Le Borne, and Jens-Peter M. Zemke. A GPU-parallelized interpolation-based fast multipole method for the relativistic space-charge field calculation. *Com-

puter Physics Communications, 291(??):Article 108825, October 2023. CODEN CPHCBZ. ISSN 0010-4655 (print), 1879-2944 (electronic). URL `http://www.sciencedirect.com/science/article/pii/S0010465523001704`.

Korchowiec:2009:ECT

[KLM+09] Jacek Korchowiec, Jakub Lewandowski, Marcin Makowski, Feng Long Gu, and Yuriko Aoki. Elongation cutoff technique armed with quantum fast multipole method for linear scaling. *Journal of Computational Chemistry*, 30 (15):2515–2525, November 30, 2009. CODEN JCCHDD. ISSN 0192-8651 (print), 1096-987X (electronic).

Kovvali:2006:RPP

[KLZ+06] Narayan Kovvali, Wenbin Lin, Zhiqin Zhao, Luise Couchman, and Lawrence Carin. Rapid prolate pseudospectral differentiation and interpolation with the fast multipole method. *SIAM Journal on Scientific Computing*, 28(2):485–497, March 2006. CODEN SJOCE3. ISSN 1064-8275 (print), 1095-7197 (electronic). URL `http://epubs.siam.org/volume-28/art_63596.html`.

Kawata:2000:CEC

[KM00] Masaaki Kawata and Masuhiro Mikami. Computationally efficient canonical molecular dynamics simulations by using a multiple time-step integrator algorithm combined with the particle mesh Ewald method and with the fast multipole method. *Journal of Computational Chemistry*, 21 (3):201–217, February 2000. CODEN JCCHDD. ISSN 0192-8651 (print), 1096-987X (electronic).

Kreuzer:2009:FMB

[KMC09] Wolfgang Kreuzer, Piotr Majdak, and Zhengsheng Chen. Fast multipole boundary element method to calculate head-related transfer functions for a wide frequency range. *Journal of the Acoustical Society of America*, 126(3):1280–1290, September 2009. CODEN JASMAN. ISSN 1520-8524.

Kokubo:1994:HSP

[KMT94] E. Kokubo, J. Makino, and M. Taiji. HARP-1: a special-purpose computer for N-body simulation with the Hermite integrator. In IEEE, editor, *Proceedings of the Twenty-Seventh Hawaii International Conference on System Sciences, 1994*, pages 292–301. IEEE Computer Society Press, 1109 Spring Street, Suite 300, Silver Spring, MD 20910, USA, 1994.

Kutteh:1995:ICM

[KN95] Ramzi Kutteh and John B. Nicholas. Implementing the cell multipole method for dipolar and charged dipolar systems. *Computer Physics Communications*, 86(3):236–254, May 1, 1995. CODEN CPHCBZ. ISSN 0010-4655 (print), 1879-2944 (electronic).

Kondratyev:1993:MME

[Kon93] V. N. Kondratyev. Multipole moments of electronic vacancies produced by fast particles in atomic clusters. *Physics Letters A*, 179(3): 209–??, August 9, 1993. CODEN PYLAAG. ISSN 0375-9601 (print), 1873-2429 (electronic).

Kurzak:2005:COF

[KP05a] Jakub Kurzak and B. Montgomery Pettitt. Communications overlapping in fast multipole particle dynamics methods. *Journal of Computational Physics*, 203(2): 731–743, March 1, 2005. CODEN JCTPAH. ISSN 0021-9991 (print), 1090-2716 (electronic). URL `http://www.sciencedirect.com/science/article/pii/S0021999104004024`.

Kurzak:2005:MPI

[KP05b] Jakub Kurzak and B. Montgomery Pettitt. Massively parallel implementation of a fast multipole method for distributed memory machines. *Journal of Parallel and Distributed Computing*, 65(7): 870–881, July 2005. CODEN JPDCER. ISSN 0743-7315 (print), 1096-0848 (electronic).

Kurzak:2008:MPI

[KP08] Jakub Kurzak and B. Montgomery Pettitt. Message-passing implementation of the data diffusion communication model in fast multipole methods: large scale biomolecular simulations. *Journal of Algorithms & Computational Technology*, 2(4):557–579, 2008. ISSN 1748-3018 (print), 1748-3026 (electronic).

Kropinski:1999:IEM

[Kro99] M. C. A. Kropinski. Integral equation methods for particle simulations in creeping flows. *Computers and Mathematics with Applications*, 38(5-6):67–87, 1999. CODEN CMAPDK. ISSN 0898-1221 (print), 1873-7668 (electronic).

Kropinski:2001:ENM

[Kro01] M. C. A. Kropinski. An efficient numerical method for studying interfacial motion in two-dimensional creeping flows. *Journal of Computational Physics*, 171(2):479–508, 2001. CODEN JCTPAH. ISSN 0021-9991 (print), 1090-2716 (electronic).

Kropinski:2002:NMM

[Kro02] M. C. A. Kropinski. Numerical methods for multiple inviscid interfaces in creeping flows. *Journal of Computational Physics*, 180(1):1–24, 2002. CODEN JCTPAH. ISSN 0021-9991 (print), 1090-2716 (electronic).

Kudin:1998:FMA

[KS98a] Konstantin N. Kudin and Gustavo E. Scuseria. A fast multipole algorithm for the efficient treatment of the Coulomb problem in electronic structure calculations of periodic systems with Gaussian orbitals. *Chemical Physics Letters*, 289(5): 611–??, ???? 1998. CODEN CHPLBC. ISSN 0009-2614 (print), 1873-4448 (electronic).

Kudin:1998:FMM

[KS98b] Konstantin N. Kudin and Gustavo E. Scuseria. A fast multipole method for periodic systems with arbitrary unit cell geometries. *Chemical Physics Letters*, 283(1): 61–??, ???? 1998. CODEN CHPLBC. ISSN 0009-2614 (print), 1873-4448 (electronic).

Kudin:2004:RIL

[KS04] Konstantin N. Kudin and Gustavo E. Scuseria. Revisiting infinite lattice sums with the periodic fast multipole method. *Journal of Chemical Physics*, 121(7):2886–2890, August 15, 2004. CODEN JCPSA6. ISSN 0021-9606 (print), 1089-7690 (electronic).

Kim:2011:CSV

[KS11] Bongkeun Kim and Xueyu Song. Calculations of the second virial coefficients of protein solutions with an extended fast multipole method. *Physical Review E (Statistical physics, plasmas, fluids, and related interdisciplinary topics)*, 83(1 Pt 1):011915, January 2011. CODEN PLEEE8. ISSN 1550-2376.

Koc:1999:EAN

[KSC99] S. Koc, Jiming Song, and W. C. Chew. Error analysis for the numerical evaluation of the diagonal forms of the scalar spherical addition theorem. *SIAM Journal on Numerical Analysis*, 36(3):906–921, 1999. CODEN SJNAAM. ISSN 0036-1429 (print), 1095-7170 (electronic).

Kim:2010:CBA

[KSS10] Bongkeun Kim, Jiming Song, and Xueyu Song. Calculations of the binding affinities of protein-protein complexes with the fast multipole method. *Journal of Chemical Physics*, 133(9):095101, September 7, 2010. CODEN JCPSA6. ISSN 1089-7690.

Labreuche:1998:CTF

[Lab98] Christophe Labreuche. A convergence theorem for the fast multipole method for 2-

dimensional scattering problems. *Mathematics of Computation*, 67(222):553–591, ???? 1998. CODEN MCMPAF. ISSN 0025-5718 (print), 1088-6842 (electronic).

Leathrum:1991:PFM

[LB91] James F. Leathrum, Jr. and John A. Board, Jr. Parallelization of the fast multipole algorithm using the BO12 transputer network. In Welch [Wel91], pages 296–310. ISBN 90-5199-045-6. LCCN ???? Describes an implementation of the fast multipole algorithm on a semi-torus-connected set of 8 transputers.

Leathrum:1992:MAF

[LB92a] James F. Leathrum, Jr. and John A. Board, Jr. Mapping the adaptive fast multipole algorithm onto MIMD systems. In Mehrotra et al. [MSV92], pages 161–178. ISBN 0-262-13272-9. LCCN Q183.9 .U57 1992. Papers presented at a workshop held by ICASE in Nags Head, NC in October 1990.

Leathrum:1992:PFMb

[LB92b] James F. Leathrum, Jr. and John A. Board, Jr. The parallel fast multipole algorithm in three dimensions. Technical Report TR92-001, Duke University, Durham, NC, USA, ???? 1992.

Liem:1991:MDS

[LBC91] S. Y. Liem, D. Brown, and Julian H. R. Clarke. Molecular dynamics simulations on distributed memory machines. *Computer Physics Communications*, 67(2):261–267, December 1991. CODEN CPHCBZ. ISSN 0010-4655 (print), 1879-2944 (electronic).

Lazarski:2016:DFT

[ŁBGS16] Roman Łazarski, Asbjörn Manfred Burow, Lukáš Grajciar, and Marek Sierka. Density functional theory for molecular and periodic systems using density fitting and continuous fast multipole method: Analytical gradients. *Journal of Computational Chemistry*, 37 (28):2518–2526, October 30, 2016. CODEN JCCHDD. ISSN 0192-8651 (print), 1096-987X (electronic).

Lim:1997:MDV

[LBI+97] Kian-Tat Lim, Sharon Brunett, Mihail Iotov, Richard B. McClurg, Nagarajan Vaidehi, Siddharth Dasgupta, Stephen Taylor, and William A. Goddard III. Molecular dynamics for very large systems on massively parallel computers: the MPSim program. *Journal of Computational Chemistry*, 18 (4):501–521, March 1997. CODEN JCCHDD. ISSN 0192-8651 (print), 1096-987X (electronic).

Lu:1993:FAS

[LC93] C. C. Lu and W. C. Chew. Fast algorithm for solving hybrid integral equations. *IEEE Proceedings-H*, 140(6):455–560, December 1993.

Lu:1994:MAS

[LC94] C. C. Lu and W. C. Chew. A multilevel algorithm for solving a boundary integral equation of wave scattering. *Microwave and Optical Technology Letters*, 7(10): 466–470, July 1994. CODEN MOTLEO. ISSN 0895-2477 (print), 1098-2760 (electronic).

Liska:2014:PFM

[LC14] Sebastian Liska and Tim Colonius. A parallel fast multipole method for elliptic difference equations. *Journal of Computational Physics*, 278(??):76–91, December 1, 2014. CODEN JCTPAH. ISSN 0021-9991 (print), 1090-2716 (electronic). URL http://www.sciencedirect.com/science/article/pii/S0021999114005415.

Letourneau:2014:CFM

[LCD14] Pierre-David Létourneau, Cris Cecka, and Eric Darve. Cauchy fast multipole method for general analytic kernels. *SIAM Journal on Scientific Computing*, 36(2):A396–A426, ???? 2014. CODEN SJOCE3. ISSN 1064-8275 (print), 1095-7197 (electronic).

Leimkuhler:2006:NAM

[LCE+06] Benedict Leimkuhler, Christophe Chipot, Ron Elber, Aatto Laaksonen, Alan Mark, Tamar Schlick, Christoph Schütte, and Robert Skeel, editors. *New Algorithms for Macromolecular Simulation*, volume 49 of *Lecture Notes in Computational Science and Engineering*. Springer-Verlag, Berlin, Germany / Heidelberg, Germany / London, UK / etc., 2006. CODEN LNCSA6. ISBN 3-540-25542-7 (print), 3-540-31618-3 (e-book). ISSN 1439-7358. LCCN QP517.M3 N49 2006. URL http://link.springer.com/book/10.1007/3-540-31618-3. Papers from the fourth edition of *Algorithms for Macromolecular Modelling*, Leicester, UK August 2004.

Lu:2010:AAF

[LCHM10] Benzhuo Lu, Xiaolin Cheng, Jingfang Huang, and J. Andrew McCammon. AFMPB: An adaptive fast multipole Poisson–Boltzmann solver for calculating electrostatics in biomolecular systems. *Computer Physics Communications*, 181(6):1150–1160, June 2010. CODEN CPHCBZ. ISSN 0010-4655 (print), 1879-2944 (electronic). URL http://www.sciencedirect.com/science/article/pii/S0010465510000548.

Lu:2013:AAF

[LCHM13] Benzhuo Lu, Xiaolin Cheng, Jingfang Huang, and J. Andrew McCammon. AFMPB: an adaptive fast multipole Poisson–Boltzmann solver for calculating electrostatics in biomolecular systems. *Computer Physics Communications*, 184(11): 2618–2619, November 2013. CODEN CPHCBZ. ISSN 0010-4655 (print), 1879-2944 (electronic). URL `http://www.sciencedirect.com/science/article/pii/S0010465513001720`.

Lathrop:2011:SPI

[LCK11] Scott Lathrop, Jim Costa, and William Kramer, editors. *SC'11: Proceedings of 2011 International Conference for High Performance Computing, Networking, Storage and Analysis, Seattle, WA, November 12–18 2011*. ACM Press and IEEE Computer Society Press, New York, NY 10036, USA and 1109 Spring Street, Suite 300, Silver Spring, MD 20910, USA, 2011. ISBN 1-4503-0771-X. LCCN ????

Lashuk:2012:MPA

[LCL+12] Ilya Lashuk, Aparna Chandramowlishwaran, Harper Langston, Tuan-Anh Nguyen, Rahul Sampath, Aashay Shringarpure, Richard Vuduc, Lexing Ying, Denis Zorin, and George Biros. A massively parallel adaptive fast multipole method on heterogeneous architectures. *Communications of the ACM*, 55 (5):101–109, May 2012. CODEN CACMA2. ISSN 0001-0782 (print), 1557-7317 (electronic).

Lu:2007:NVF

[LCM07] Benzhuo Lu, Xiaolin Cheng, and J. Andrew McCammon. "New-version-fast-multipole-method" accelerated electrostatic calculations in biomolecular systems. *Journal of Computational Physics*, 226(2):1348–1366, 2007. CODEN JCTPAH. ISSN 0021-9991 (print), 1090-2716 (electronic).

Lustig:1993:FMM

[LCP93] Steven R. Lustig, J. J. Cristy, and D. A. Pensak. The Fast Multipole Method in canonical ensemble dynamics on massively parallel computers. *MRS Proceedings*, 278:9–??, 1993. CODEN ???? ISSN 1946-4274.

Li:2018:MDL

[LCQF18] Junpu Li, Wen Chen, Qinghua Qin, and Zhuojia Fu. A modified dual-level fast multipole boundary element method for large-scale three-dimensional potential problems. *Computer Physics Communications*, 233(??):51–61, December 2018. CODEN CPHCBZ. ISSN 0010-4655 (print), 1879-2944 (electronic). URL `http:`

//www.sciencedirect.com/science/article/pii/S0010465518302467.

Lu:2007:AFM

[LCZ07] Wei Bing Lu, Tie Jun Cui, and Hui Zhao. Acceleration of fast multipole method for large-scale periodic structures with finite sizes using sub-entire-domain basis functions. *IEEE Transactions on Antennas and Propagation*, 55(2): 414–421, 2007. CODEN IETPAK. ISSN 0018-926x (print), 1558-2221 (electronic).

Lambert:1996:MBA

[LDB96] Christophe G. Lambert, Thomas A. Darden, and John A. Board, Jr. A multipole-based algorithm for efficient calculation of forces and potentials in macroscopic periodic assemblies of particles. *Journal of Computational Physics*, 126(2):274–285, July 1996. CODEN JCTPAH. ISSN 0021-9991 (print), 1090-2716 (electronic). URL http://www.sciencedirect.com/science/article/pii/S0021999196901370.

LeRouzo:1997:MEC

[Le 97] H. Le Rouzo. Multipole expansion of Cartesian Gaussian orbitals about a new origin. *International Journal of Quantum Chemistry*, 64(6): 647–??, ???? 1997. CODEN IJQCB2. ISSN 0020-7608 (print), 1097-461X (electronic).

Leathrum:1992:PFMa

[Lea92] James F. Leathrum, Jr. *Parallelization of the Fast Multipole Algorithm: Algorithm and Architecture Design*. Ph.d. thesis, Duke University, ????, ???? 1992. ???? pp.

Lemou:1998:MEF

[Lem98] M. Lemou. Multipole expansions for the Fokker–Planck–Landau operator. *Numerische Mathematik*, 78(4): 597–618, 1998. CODEN NUMMA7. ISSN 0029-599X (print), 0945-3245 (electronic).

Lemou:2004:MAF

[Lem04] Mohammed Lemou. On multipole approximations of the Fokker–Planck–Landau operator. In *Modeling and computational methods for kinetic equations*, Model. Simul. Sci. Eng. Technol., pages 195–218. Birkhäuser Boston Inc., Cambridge, MA, USA, 2004.

Leszczynski:1996:CCR

[Les96] Jerzy Leszczynski, editor. *Computational chemistry: reviews of current trends*. World Scientific Publishing Co., Singapore; Philadelphia, PA, USA; River Edge, NJ, USA, 1996. ISBN 981-02-2572-5 (hardcover), 981-02-2843-0 (paperback). ???? pp. LCCN QD39.3.M3C66 1996.

Liang:2013:FMM

[LGG+13] Zhi Liang, Zydrunas Gimbutas, Leslie Greengard, Jingfang Huang, and Shidong Jiang. A fast multipole method for the Rotne–Prager–Yamakawa tensor and its applications. *Journal of Computational Physics*, 234 (??):133–139, February 1, 2013. CODEN JCTPAH. ISSN 0021-9991 (print), 1090-2716 (electronic). URL `http://www.sciencedirect.com/science/article/pii/S0021999112005529`.

Li:2021:RAT

[LGQZ21] Junpu Li, Yan Gu, Qing-Hua Qin, and Lan Zhang. The rapid assessment for three-dimensional potential model of large-scale particle system by a modified multilevel fast multipole algorithm. *Computers and Mathematics with Applications*, 89 (??):127–138, May 1, 2021. CODEN CMAPDK. ISSN 0898-1221 (print), 1873-7668 (electronic). URL `http://www.sciencedirect.com/science/article/pii/S0898122121000717`.

Lim:2008:FFT

[LHL08] Kian Meng Lim, Xuefei He, and Siak Piang Lim. Fast Fourier transform on multipoles (FFTM) algorithm for Laplace equation with direct and indirect boundary element method. *Computational mechanics*, 41(2):313–323, 2008. CODEN CMMEEE. ISSN 0178-7675 (print), 1432-0924 (electronic).

Liu:2024:MPM

[LHYS24] Xin-Duo Liu, Wei-Jia He, Ming-Lin Yang, and Xin-Qing Sheng. Massive parallelization of multilevel fast multipole algorithm for 3-D electromagnetic scattering problems on SW26010 many-core cluster. *The Journal of Supercomputing*, 80(7): 8702–8718, May 2024. CODEN JOSUED. ISSN 0920-8542 (print), 1573-0484 (electronic). URL `https://link.springer.com/article/10.1007/s11227-023-05759-2`.

Linton:1995:MMB

[Lin95] C. M. Linton. Multipole methods for boundary-value problems involving a sphere in a tube. *IMA Journal of Applied Mathematics*, 55(2): 187–204, ???? 1995. CODEN IJAMDM. ISSN 0272-4960 (print), 1464-3634 (electronic).

Liu:1994:PIB

[Liu94] Pangfeng Liu. *The Parallel Implementation of N-body Algorithms*. Ph.d. thesis, Yale University, New Haven, CT, USA, ???? 1994. ???? pp.

Liu:2008:FMB

[Liu08] Y. J. Liu. A fast multipole boundary element method for 2D multi-domain elastostatic problems based on a dual BIE formulation. *Computational mechanics*, 42(5): 761–773, 2008. CODEN CMMEEE. ISSN 0178-7675 (print), 1432-0924 (electronic).

Liu:2009:FMB

[Liu09] Yijun Liu. *Fast multipole boundary element method*. Cambridge University Press, Cambridge, UK, 2009. ISBN 0-521-11659-7 (hardcover), 0-511-60534-X (electronic). xviii + 235 pp. Theory and applications in engineering.

Lu:1996:AFMb

[LJ96a] N. Lu and J.-M. Jin. Application of fast multipole method to finite element-boundary integral solution of scattering problems. In Anonymous [Ano96], pages 1182–1189. Two volumes.

Lu:1996:AFMa

[LJ96b] Ninglong Lu and Jian-Ming Jin. Application of fast multipole method to finite-element boundary-integral solution of scattering problems. *IEEE Transactions on Antennas and Propagation*, 44(6): 781–786, ???? 1996. CODEN IETPAK. ISSN 0018-926x (print), 1558-2221 (electronic).

Lee:1998:PPS

[LJ98] J.-Y. Lee and K. Jeong. A parallel Poisson solver using the fast multipole method on networks of workstations. *Computers and Mathematics with Applications*, 36(4):47–61, 1998. CODEN CMAPDK. ISSN 0898-1221 (print), 1873-7668 (electronic).

Lienhart:2002:UFP

[LKM02] G. Lienhart, A. Kugel, and R. Manner. Using floating-point arithmetic on FPGAs to accelerate scientific N-body simulations. In Pocek and Arnold [PA02], pages 182–191. ISBN 0-7695-1801-X. ISSN 1082-3409. LCCN TK7895.G36 I36 2002. URL http://ieeexplore.ieee.org/servlet/opac?punumber=8168.

Lakshminarasimhulu:2002:CMB

[LM02] Pasupulati Lakshminarasimhulu and Jeffry D. Madura. A cell multipole based domain decomposition algorithm for molecular dynamics simulation of systems of arbitrary shape. *Computer Physics Communications*, 144 (2):141–153, April 1, 2002. CODEN CPHCBZ. ISSN 0010-4655 (print), 1879-2944 (electronic). URL http://www.sciencedirect.com/science/article/pii/S0010465502001571.

Lin:1992:MDD

[LMCPP92] S. L. Lin, J. Mellor-Crummey, B. M. Pettitt, and G. N. Phillips Jr. Molecular dynamics on a distributed-memory multiprocessor. *Journal of*

Computational Chemistry, 13 (8):1022–1035, October 1992. CODEN JCCHDD. ISSN 0192-8651 (print), 1096-987X (electronic).

Lu:1996:MPF

[LO96a] E. J.-L. Lu and D. I. Okunbor. A massively parallel fast multipole algorithm in three dimensions. In IEEE [IEE96b], pages 40–48. ISBN 0-8186-7582-9. LCCN QA76.88.I52 1996. IEEE order plan catalog number 96TB100069. EEE Computer Society Press order number PR07582.

Lu:1996:PIF

[LO96b] E. J.-L. Lu and D. I. Okunbor. Parallel implementation of 3D FMA using MPI. In IEEE [IEE96c], pages 119–124. ISBN 0-8186-7533-0. LCCN QA76.642 .M67 1996.

Lee:2012:MMM

[LOG12] Dongryeol Lee, Arkadas Ozakin, and Alexander G. Gray. Multibody multipole methods. *Journal of Computational Physics*, 231(20): 6827–6845, August 15, 2012. CODEN JCTPAH. ISSN 0021-9991 (print), 1090-2716 (electronic). URL `http://www.sciencedirect.com/science/article/pii/S0021999112003427`.

Langer:2007:IDS

[LOSZ07a] U. Langer, G. Of, O. Steinbach, and W. Zulehner. Inexact data-sparse boundary element tearing and interconnecting methods. *SIAM Journal on Scientific Computing*, 29(1):290–314, 2007. CODEN SJOCE3. ISSN 1064-8275 (print), 1095-7197 (electronic).

Langer:2007:IFM

[LOSZ07b] Ulrich Langer, Günther Of, Olaf Steinbach, and Walter Zulehner. Inexact fast multipole boundary element tearing and interconnecting methods. In *Domain decomposition methods in science and engineering XVI*, volume 55 of *Lect. Notes Comput. Sci. Eng.*, pages 405–412. Springer, Berlin, 2007.

Ly:1999:SPD

[LRJ+99] H. V. Ly, F. Reitich, M. R. Jolly, H. T. Banks, and K. Ito. Simulations of particle dynamics in magnetorheological fluids. *Journal of Computational Physics*, 155(1): 160–177, October 10, 1999. CODEN JCTPAH. ISSN 0021-9991 (print), 1090-2716 (electronic). URL `http://www.sciencedirect.com/science/article/pii/S0021999199963350`.

Lustig:1995:TFM

[LRW95] Steven R. Lustig, Sanjeev Rastogi, and Norman Wagner. Telescoping fast multipole methods using Chebyshev economization. *Journal of Computational Physics*, 122(2):317–322, December

1995. CODEN JCTPAH. ISSN 0021-9991 (print), 1090-2716 (electronic). URL http://www.sciencedirect.com/science/article/pii/S002199918571217X.

Lambin:1993:ESM

[LS93] Ph. Lambin and P. Senet. Ewald summation of multipolar interactions at an arbitrary order on a two-dimensional lattice. *International Journal of Quantum Chemistry*, 46(1):101–107, 1993. CODEN IJQCB2. ISSN 0020-7608 (print), 1097-461X (electronic).

Langer:2005:CBF

[LS05] Ulrich Langer and Olaf Steinbach. Coupled boundary and finite element tearing and interconnecting methods. In *Domain decomposition methods in science and engineering*, volume 40 of *Lect. Notes Comput. Sci. Eng.*, pages 83–97. Springer, Berlin, 2005.

Lu:1996:AFA

[LSCM96] C.-C. Lu, J.-M. Song, Weng Cho Chew, and E. Michielssen. The application of far-field approximation to accelerate the fast multipole method. In IEEE [IEE96a], pages 1738–1741. ISBN 0-7803-3217-2 (casebound), 0-7803-3216-4 (softbound), 0-7803-3218-0 (microfiche). LCCN TK7871.6.A68 1996. Three volumes.

Lupo:2002:LSM

[LWM+02] James A. Lupo, Zhiqiang Wang, Alan M. McKenney, Ruth Pachter, and William Mattson. A large scale molecular dynamics simulation code using the fast multipole algorithm (FMD): Performance and application. *Journal of Molecular Graphics & Modelling*, 21(2):89–99, ???? 2002. ISSN 1093-3263.

Liu:2017:FMM

[LX17] Guidong Liu and Shuhuang Xiang. Fast multipole methods for approximating a function from sampling values. *Numerical Algorithms*, 76(3):727–743, November 2017. CODEN NUALEG. ISSN 1017-1398 (print), 1572-9265 (electronic).

Liang:2022:FMM

[LX22] Jiangli Liang and Shuhuang Xiang. A fast multipole method for Fredholm integral equations of the second kind with general kernel $K(x, y) = K(x - y)$. *Computers and Mathematics with Applications*, 118(??):237–247, July 15, 2022. CODEN CMAPDK. ISSN 0898-1221 (print), 1873-7668 (electronic). URL http://www.sciencedirect.com/science/article/pii/S0898122122002012.

Liang:2023:KIU

[LX23] Jiangli Liang and Shuhuang Xiang. A kernel-independent uniform fast multipole method based on barycentric rational interpolation. *Numerical Algorithms*, 93(4):1595–1611, August 2023. CODEN NUALEG. ISSN 1017-1398 (print), 1572-9265 (electronic). URL `https://link.springer.com/article/10.1007/s11075-022-01481-x`.

Ltaief:2014:DDE

[LY14] Hatem Ltaief and Rio Yokota. Data-driven execution of fast multipole methods. *Concurrency and Computation: Practice and Experience*, 26 (11):1935–1946, August 10, 2014. CODEN CCPEBO. ISSN 1532-0626 (print), 1532-0634 (electronic).

Lee:2004:SIP

[LZL04] Jeonghwa Lee, Jun Zhang, and Cai-Cheng Lu. Sparse inverse preconditioning of multilevel fast multipole algorithm for hybrid integral equations in electromagnetics. *IEEE Transactions on Antennas and Propagation*, 52 (9):2277–2287, 2004. CODEN IETPAK. ISSN 0018-926x (print), 1558-2221 (electronic).

Makedon:1993:PDA

[Mak93] F. Makedon, editor. *Parallel I/O and databases: 2nd Annual symposium on issues and obstacles in the practical implementation of parallel algorithms and the use of parallel machines — June 1993, Hanover, NH*, Dartmouth Institute for Advanced Graduate Studies in Parallel Computation. DIAGS, Hanover, NH, USA, 1993.

Makino:1999:YAF

[Mak99] Junichiro Makino. Yet another fast multipole method without multipoles—pseudoparticle multipole method. *Journal of Computational Physics*, 151 (2):910–920, May 20, 1999. CODEN JCTPAH. ISSN 0021-9991 (print), 1090-2716 (electronic). URL `http://www.sciencedirect.com/science/article/pii/S0021999199962265`.

Makino:2004:FPT

[Mak04] J. Makino. A fast parallel treecode with GRAPE. *Publications of the Astronomical Society of Japan*, 56(??):521–531, June 2004. CODEN PASJAC. ISSN 0004-6264.

Mattson:1995:PCC

[Mat95] Timothy G. Mattson, editor. *Parallel Computing in Computational Chemistry*, volume 592 of *ACS symposium series*. American Chemical Society, Washington, DC, USA, 1995. ISBN 0-8412-3166-4. LCCN QD39.3.E46 P32 1995. Proceedings of 207th National Meeting of the American Chemical Society, San Diego, CA, March 13–17, 1994.

Margonari:2005:FMM

[MB05] Massimiliano Margonari and Marc Bonnet. Fast multipole method applied to elastostatic BEM-FEM coupling. *Computers and Structures*, 83 (10-11):700–717, 2005. CODEN CMSTCJ. ISSN 0045-7949 (print), 1879-2243 (electronic).

Malhotra:2016:ADM

[MB16] Dhairya Malhotra and George Biros. Algorithm 967: A distributed-memory fast multipole method for volume potentials. *ACM Transactions on Mathematical Software*, 43(2):17:1–17:27, September 2016. CODEN ACMSCU. ISSN 0098-3500 (print), 1557-7295 (electronic). URL `http://dl.acm.org/citation.cfm?id=2898349`.

Marchetti:1997:ICB

[MBA97] M. Marchetti, C. A. Brebbia, and M. H. Aliabadi, editors. *International Conference on Boundary Element Methods (19th: 1997: Rome, Italy)*, volume 19. Computational Mechanics, Southampton, UK, 1997. ISBN 1-85312-472-9. LCCN TA347.B69I565 1997.

Makino:2000:LEF

[MBS+00] Jun Makino, John Board, Klaus Schulten, Peter Borcherds, and Rubin D. Orduz Z. Letters to the editors: "The Fast Multipole Algorithm" and "The Top 10 Algorithms". *Computing in Science and Engineering*, 2 (3):4–5, May/June 2000. CODEN CSENFA. ISSN 1521-9615 (print), 1558-366X (electronic). URL `http://dlib.computer.org/cs/books/cs2000/pdf/c3004.pdf`. See [DS00, BS00].

Mehl:2015:RTC

[MBS15] Miriam Mehl, Manfred Bischoff, and Michael Schäfer, editors. *Recent Trends in Computational Engineering — CE2014: Optimization, Uncertainty, Parallel Algorithms, Coupled and Complex Problems*, volume 105 of *Lecture Notes in Computational Science and Engineering*. Springer-Verlag, Berlin, Germany / Heidelberg, Germany / London, UK / etc., 2015. ISBN 3-319-22996-6, 3-319-22997-4 (e-book). 317 (est.) pp. LCCN QA71-90; TA329. URL `http://www.springerlink.com/content/978-3-319-22997-3`.

Mandel:1992:SIM

[MC92] Jan Mandel and Graham F. Carey, editors. *Special issue on multigrid methods: from the Fifth Copper Mountain Conference on Multigrid Methods*, volume 9(9–10) of *Communications in applied numerical methods*. Wiley, New York, NY, USA,

1992. ISBN ???? LCCN ???? Two volumes. Selected papers from the Fifth Copper Mountain Conference on Multigrid Methods, Colorado, April 1991.

McCorquodale:2007:LCA

[MCBB07] Peter McCorquodale, Phillip Colella, Gregory T. Balls, and Scott B. Baden. A local corrections algorithm for solving Poisson's equation in three dimensions. *Communications in Applied Mathematics and Computational Science*, 2:57–81, 2007. ISSN 1559-3940 (print), 2157-5452 (electronic).

McDowell:1997:CGM

[McD97] Sean A. C. McDowell. Computation of general multipole moment expansions for N atoms by MAPLE. *International Journal of Quantum Chemistry*, 62(4):343–351, April 15, 1997. CODEN IJQCB2. ISSN 0020-7608 (print), 1097-461X (electronic).

McKenney:1996:AFM

[McK96] A. McKenney. An adaptation of the fast multipole method for evaluating layer potentials in two dimensions. *Computers and Mathematics with Applications*, 31(1):33–57, ???? 1996. CODEN CMAPDK. ISSN 0898-1221 (print), 1873-7668 (electronic).

Marengo:1998:TDP

[MD98] Edwin A. Marengo and Anthony J. Devaney. Time-dependent plane wave and multipole expansions of the electromagnetic field. *Journal of Mathematical Physics*, 39(7):3643–3660, July 1998. CODEN JMAPAQ. ISSN 0022-2488 (print), 1089-7658 (electronic), 1527-2427.

Makino:2012:GAG

[MD12] Junichiro Makino and Hiroshi Daisaka. GRAPE-8: an accelerator for gravitational N-body simulation with 20.5Gflops/W performance. In Hollingsworth [Hol12], pages 104:1–104:10. ISBN 1-4673-0804-8. URL `http://conferences.computer.org/sc/2012/papers/1000a081.pdf`.

Makino:2000:TSB

[MFK00] J. Makino, T. Fukushige, and M. Koga. A 1.349 Tflops simulation of black holes in a galactic center on GRAPE-6. In *Proceedings of the 2000 ACM/IEEE conference on Supercomputing*, page ?? ACM Press, New York, NY 10036, USA, 2000. URL `http://dl.acm.org/citation.cfm?id=370049.370426`.

Makino:2003:GMP

[MFKN03] J. Makino, T. Fukushige, M. Koga, and K. Namura. GRAPE-6: Massively-parallel special-purpose computer for astrophysical particle simulations. *Publications of the Astronomical Society of Japan*, 55(??):1163–1187, December 2003. CODEN PASJAC. ISSN 0004-6264.

Marzouk:2005:MCO

[MG05] Youssef M. Marzouk and Ahmed F. Ghoniem. K-means clustering for optimal partitioning and dynamic load balancing of parallel hierarchical N-body simulations. *Journal of Computational Physics*, 207(2):493–528, August 10, 2005. CODEN JCTPAH. ISSN 0021-9991 (print), 1090-2716 (electronic). URL `http://www.sciencedirect.com/science/article/pii/S0021999105000380`.

Malas:2007:IPM

[MG07] Tahîr Malas and Levent Gürel. Incomplete *LU* preconditioning with the multilevel fast multipole algorithm for electromagnetic scattering. *SIAM Journal on Scientific Computing*, 29(4):1476–1494, 2007. CODEN SJOCE3. ISSN 1064-8275 (print), 1095-7197 (electronic).

Malas:2009:AMF

[MG09] Tahîr Malas and Levent Gürel. Accelerating the multilevel fast multipole algorithm with the sparse-approximate-inverse (SAI) preconditioning. *SIAM Journal on Scientific Computing*, 31(3):1968–1984, 2009. CODEN SJOCE3. ISSN 1064-8275 (print), 1095-7197 (electronic).

Malas:2011:SCP

[MG11] Tahír Malas and Levent Gürel. Schur complement preconditioners for surface integral-equation formulations of dielectric problems solved with the multilevel fast multipole algorithm. *SIAM Journal on Scientific Computing*, 33(5): 2440–2467, ???? 2011. CODEN SJOCE3. ISSN 1064-8275 (print), 1095-7197 (electronic). URL `http://epubs.siam.org/sisc/resource/1/sjoce3/v33/i5/p2440_s1`.

McKenney:1995:FPS

[MGM95] A. McKenney, L. Greengard, and A. Mayo. A fast Poisson solver for complex geometries. *Journal of Computational Physics*, 118(2):348–355, May 1995. CODEN JCTPAH. ISSN 0021-9991 (print), 1090-2716 (electronic). URL `http://www.sciencedirect.com/science/article/pii/S0021999185711047`.

Makino:2007:GDP

[MHI07] Junichiro Makino, Kei Hiraki, and Mary Inaba. GRAPE-DR: 2-Pflops massively-parallel computer with 512-core, 512-Gflops processor chips for scientific computing. In Becky Verastegui, editor, *SC '07: Proceedings of the 2007 ACM/IEEE conference on Super-*

computing, pages 1–11. ACM Press and IEEE Computer Society Press, New York, NY 10036, USA and 1109 Spring Street, Suite 300, Silver Spring, MD 20910, USA, 2007. ISBN 1-59593-764-1. URL arnumber=5348841; http://ieeexplore.ieee.org/stamp/stamp.jsp?tp=&amp.

MacDonald:1995:FSM

[MI95] P. A. MacDonald and T. Itoh. Fast simulation of microstrip antennas using the fast multipole method. In Anonymous [Ano95a], pages 737–741. ISBN 1-899919-15-5. LCCN TK 7876 E89 1995. Two volumes.

Macdonald:1996:FSM

[MI96] P. A. Macdonald and T. Itoh. Fast simulation of microstrip structures using the fast multipole method. *International journal of numerical modelling*, 9(5):345–??, ???? 1996. CODEN IJNFEX. ISSN 0894-3370 (print), 1099-1204 (electronic).

Makino:1990:GSP

[MIES90] J. Makino, T. Ito, T. Ebisuzaki, and D. Sugimoto. GRAPE: a special-purpose computer for N-body problems. In IEEE, editor, *Proceedings of the International Conference on Application Specific Array Processors, 1990*, pages 180–189. IEEE Computer Society Press, 1109 Spring Street, Suite 300, Silver Spring, MD 20910, USA, 1990. URL http://ieeexplore.ieee.org/stamp/stamp.jsp?tp=&arnumber=145455.

Miller:2008:IBP

[Mil08] G. H. Miller. An iterative boundary potential method for the infinite domain Poisson problem with interior Dirichlet boundaries. *Journal of Computational Physics*, 227(16):7917–7928, 2008. CODEN JCTPAH. ISSN 0021-9991 (print), 1090-2716 (electronic).

Makino:2001:PET

[MKF01] J. Makino, E. Kokubo, and T. Fukushige. Performance evaluation and tuning of GRAPE-6 — towards 40 'real' Tflops. In *Proceedings of the 2001 ACM/IEEE conference on Supercomputing*, pages 2–?? ACM Press, New York, NY 10036, USA, 2001.

Makino:2002:TSP

[MKFD02] Junichiro Makino, Eiichiro Kokubo, Toshiyuki Fukushige, and Hiroshi Daisaka. A 29.5 Tflops simulation of planetesimals in Uranus–Neptune region on GRAPE-6. In IEEE [IEE02], page ?? ISBN 0-7695-1524-X. LCCN ???? URL http://www.sc-2002.org/paperpdfs/pap.pap146.pdf.

McCurdy:1999:ECP

[MMC99] Collin McCurdy and John Mellor-Crummey. An evaluation of computing paradigms for N-body simulations on distributed memory architectures. *ACM SIGPLAN Notices*, 34(8):25–36, August 1999. CODEN SINODQ. ISSN 0362-1340 (print), 1523-2867 (print), 1558-1160 (electronic). URL `http://www.acm.org/pubs/citations/proceedings/ppopp/301104/p25-mccurdy/`.

Morice:2006:FMM

[MMNB06] J. Morice, K. Mer-Nkonga, and A. Bachelot. Fast multipole method for solving the radiosity equation. In *Numerical mathematics and advanced applications*, pages 609–617. Springer, Berlin, 2006.

McKenney:1996:MDS

[MPPA96] A. McKenney, R. Pachter, S. Patnaik, and W. Adams. Molecular dynamics simulations of a siloxane-based liquid crystal using an improved fast multipole algorithm implementation. In Kaxiras et al. [K$^+$96], pages 99–106. ISBN 1-55899-311-8. ISSN 0272-9172 (print), 1946-4274 (electronic). LCCN TA404.23 .M38 1996.

Meyer:2021:IBH

[MPZ21] Bruno Henrique Meyer, Aurora Trinidad Ramirez Pozo, and Wagner M. Nunan Zola. Improving Barnes–Hut t-SNE algorithm in modern GPU architectures with random forest KNN and simulated wide-warp. *ACM Journal on Emerging Technologies in Computing Systems (JETC)*, 17(4):53:1–53:26, October 2021. CODEN ???? ISSN 1550-4832. URL `https://dl.acm.org/doi/10.1145/3447779`.

Martinsson:2007:AKI

[MR07] P. G. Martinsson and V. Rokhlin. An accelerated kernel-independent fast multipole method in one dimension. *SIAM Journal on Scientific Computing*, 29 (3):1160–1178, 2007. CODEN SJOCE3. ISSN 1064-8275 (print), 1095-7197 (electronic).

Milthorpe:2014:PFI

[MRH14] Josh Milthorpe, Alistair P. Rendell, and Thomas Huber. PGAS-FMM: Implementing a distributed fast multipole method using the X10 programming language. *Concurrency and Computation: Practice and Experience*, 26(3):712–727, March 10, 2014. CODEN CCPEBO. ISSN 1532-0626 (print), 1532-0634 (electronic).

Muller:2020:RTT

[MSS20] Carolin Müller, Manas Sharma, and Marek Sierka. Real-time time-dependent density functional theory using density fitting and the continuous fast multipole method. *Journal of Computational Chemistry*, 41(30):2573–2582, November 15, 2020. CODEN JCCHDD. ISSN 0192-8651 (print), 1096-987X (electronic).

Mehrotra:1992:USC

[MSV92] Piyush Mehrotra, Joel Saltz, and Robert Voigt, editors. *Unstructured Scientific Computation on Scalable Microprocessors*. MIT Press, Cambridge, MA, USA, 1992. ISBN 0-262-13272-9. LCCN Q183.9 .U57 1992. Papers presented at a workshop held by ICASE in Nags Head, NC in October 1990.

Makino:1995:ABS

[MT95] J. Makino and M. Taiji. Astrophysical N-body simulations on the GRAPE-4 special-purpose computer. In Karin [Kar95], pages 63–?? ISBN 0-89791-816-9. LCCN ???? URL `http://www.supercomp.org/sc95/proceedings/721_JMAK/SC95.HTM`. These proceedings are not available in printed form. However, they are available on the World Wide Web, and on CD-ROM, available from ACM (ACM Press order number 415952) and IEEE (IEEE Computer Society Press order number FW07435).

Makino:1998:SSS

[MT98] J. Makino and M. Taiji. Scientific simulations with special-purpose computers — the GRAPE systems. In J. Makino and M. Taiji, editors, *????*, page ?? ????, ????, 1998.

Makino:1994:GOT

[MTES94] J. Makino, M. Taiji, T. Ebisuzaki, and D. Sugimoto. GRAPE-4: a one-Tflops special-purpose computer for astrophysical N-body problem. In IEEE [IEE94c], pages 429–438. ISBN 0-8186-6605-6 (paper), 0-8186-6606-4 (microfiche), 0-8186-6607-2 (case). ISSN 1063-9535. LCCN QA76.5 .S894 1994. URL `http://sc94.ameslab.gov/AP/contents.html`. IEEE catalog number 94CH34819.

Nishida:1997:AFM

[NH97] T. Nishida and K. Hayami. Application of the fast multipole method to the 3-D BEM analysis of electron guns. In Marchetti et al. [MBA97], pages 613–624. ISBN 1-85312-472-9. LCCN TA347.B69I565 1997.

Nilsson:2004:SHF

[Nil04] Martin Nilsson. Stability of the high frequency fast multipole method for Helmholtz' equation in three dimensions. *BIT (Nordisk tidskrift for informationsbehandling)*, 44 (4):773–791, 2004. CODEN BITTEL, NBITAB. ISSN 0006-3835 (print), 1572-9125 (electronic). URL http://www.springerlink.com/openurl.asp?genre=article&issn=0006-3835&volume=44&issue=4&spage=773.

Nakano:1994:MMD

[NKV94] Aiichiro Nakano, Rajiv K. Kalia, and Priya Vashishta. Multiresolution molecular dynamics algorithm for realistic materials modeling on parallel computers. *Computer Physics Communications*, 83(2–3): 197–214, December 1994. CODEN CPHCBZ. ISSN 0010-4655 (print), 1879-2944 (electronic).

Najm:1999:CLE

[NMDK99] H. N. Najm, R. B. Milne, K. D. Devine, and S. N. Kempka. A coupled Lagrangian–Eulerian scheme for reacting flow modeling. In *Flows and related numerical methods (Toulouse, 1998)*, volume 7 of *ESAIM Proc.*, pages 304–313. Soc. Math. Appl. Indust., Paris, 1999.

Nitadori:2006:PTB

[NMH06] K. Nitadori, J. Makino, and P. Hut. Performance tuning of N-body codes on modern microprocessors: I. Direct integration with a Hermite scheme on x86_64 architecture. *New Astronomy*, 12(??): 169–181, December 2006. CODEN NEASFS. ISSN 1384-1076 (print), 1384-1092 (electronic).

Niino:2012:PBC

[NN12] Kazuki Niino and Naoshi Nishimura. Preconditioning based on Calderon's formulae for periodic fast multipole methods for Helmholtz' equation. *Journal of Computational Physics*, 231(1): 66–81, January 1, 2012. CODEN JCTPAH. ISSN 0021-9991 (print), 1090-2716 (electronic). URL http://www.sciencedirect.com/science/article/pii/S0021999111005067.

Nyland:1993:DIA

[NPR93] L. S. Nyland, J. F. Prins, and J. H. Reif. A data-parallel implementation of the adaptive fast multipole algorithm. In Makedon [Mak93], pages 111–122.

Niedermeier:1994:SAM

[NT94] Christoph Niedermeier and Paul Tavan. A structure adapted multipole method for electrostatic interactions in protein dynamics. *Journal of Chemical Physics*, 101(1): 734–748, ???? 1994. CODEN JCPSA6. ISSN 0021-9606 (print), 1089-7690 (electronic).

Niedermeier:1996:FVS

[NT96] C. Niedermeier and P. Tavan. Fast version of the structure adapted multipole method-efficient calculation of electrostatic forces in protein dynamics. *Molecular simulation*,

17(1):57–??, ???? 1996. CODEN MOSIEA. ISSN 0892-7022 (print), 1029-0435 (electronic).

Nakashima:2009:WFM

[NT09] N. Nakashima and M. Tateiba. A wideband fast multipole algorithm for two-dimensional volume integral equations. *International Journal for Numerical Methods in Engineering*, 77(2):195–213, 2009. CODEN IJNMBH. ISSN 0029-5981 (print), 1097-0207 (electronic).

Nabors:1989:FMA

[NW89] K. Nabors and J. White. Fast multipole algorithm for capacitance extraction of complex 3-D geometries. In *Proceedings of the Custom Integrated Circuits Conference. Town & Country Hotel, San Diego, California, May 15–18, 1989*, pages 21.7/1–4. IEEE Computer Society Press, 1109 Spring Street, Suite 300, Silver Spring, MD 20910, USA, May 1989. CODEN PCICER. ISBN ???? ISSN 0886-5930. LCCN TK7874 .C87 1989. IEEE catalog no. 89CH2671-6. IEEE catalog no. 89CM2671-6.

Ohnuki:2003:TEA

[OC03] Shinichiro Ohnuki and Weng Cho Chew. Truncation error analysis of multipole expansion. *SIAM Journal on Scientific Computing*, 25(4):1293–1306, 2003. CODEN SJOCE3. ISSN 1064-8275 (print), 1095-7197 (electronic).

Ohnuki:2005:EMM

[OC05] Shinichiro Ohnuki and Weng Cho Chew. Error minimization of multipole expansion. *SIAM Journal on Scientific Computing*, 26(6): 2047–2065, November 2005. CODEN SJOCE3. ISSN 1064-8275 (print), 1095-7197 (electronic). URL http://epubs.siam.org/sam-bin/dbq/article/41797.

Ogata:2003:SPI

[OCK+03] Shuji Ogata, Timothy J. Campbell, Rajiv K. Kalia, Aiichiro Nakano, Priya Vashishta, and Satyavani Vemparala. Scalable and portable implementation of the fast multipole method on parallel computers. *Computer Physics Communications*, 153 (3):445–461, July 1, 2003. CODEN CPHCBZ. ISSN 0010-4655 (print), 1879-2944 (electronic). URL http://www.sciencedirect.com/science/article/pii/S0010465503002467.

Of:2007:FMM

[Of07] Günther Of. Fast multipole methods and applications. In *Boundary element analysis*, volume 29 of *Lect. Notes Appl. Comput. Mech.*, pages 135–160. Springer, Berlin, 2007.

Of:2008:EAM

[Of08] G. Of. An efficient algebraic multigrid preconditioner for a fast multipole boundary element method. *Computing: Archiv für informatik und numerik*, 82(2-3):139–155, 2008. CODEN CMPTA2. ISSN 0010-485X (print), 1436-5057 (electronic).

Ooi:2008:HFM

[OFH+08] B. L. Ooi, Y. J. Fan, Hristo D. Hristov, Rodolfo Feick, Xuechuan Shan, and Albert Lu. A hybrid fast multipole pseudo-spectral time domain method. *IEEE Transactions on Antennas and Propagation*, 56(5):1394–1401, 2008. CODEN IETPAK. ISSN 0018-926x (print), 1558-2221 (electronic).

Osei-Kuffuor:2014:SAL

[OKF14] Daniel Osei-Kuffuor and Jean-Luc Fattebert. A scalable $O(N)$ algorithm for large-scale parallel first-principles molecular dynamics simulations. *SIAM Journal on Scientific Computing*, 36(4):C353–C375, ???? 2014. CODEN SJOCE3. ISSN 1064-8275 (print), 1095-7197 (electronic).

Of:2009:FMB

[OKS09] G. Of, M. Kaltenbacher, and O. Steinbach. Fast multipole boundary element method for electrostatic field computations. *COMPEL*, 28(2):304–319, 2009. ISSN 0332-1649.

Okunbor:1996:IMB

[Oku96] Daniel I. Okunbor. Integration methods for N-body problems. In *Proceedings of Dynamic Systems and Applications, Vol. 2 (Atlanta, GA, 1995)*, pages 435–442. Dynamic, Atlanta, GA, 1996.

Ong:2004:FFT

[OLL04] Eng Teo Ong, Heow Pueh Lee, and Kian Meng Lim. A fast Fourier transform on multipoles (FFTM) algorithm for solving Helmholtz equation in acoustics analysis. *Journal of the Acoustical Society of America*, 116(3):1362–1371, September 2004. CODEN JASMAN. ISSN 0001-4966.

Ong:2003:FAT

[OLLL03] E. T. Ong, K. M. Lim, K. H. Lee, and H. P. Lee. A fast algorithm for three-dimensional potential fields calculation: fast Fourier transform on multipoles. *Journal of Computational Physics*, 192(1): 244–261, November 20, 2003. CODEN JCTPAH. ISSN 0021-9991 (print), 1090-2716 (electronic). URL `http://www.sciencedirect.com/science/article/pii/S0021999103003772`.

Olyslager:2008:FMM

[OMC08] Femke Olyslager, Lieven Meert, and Kristof Cools.

The fast multipole method in electromagnetics applied to the simulation of metamaterials. *Journal of Computational and Applied Mathematics*, 215(2):528–537, June 1, 2008. CODEN JCAMDI. ISSN 0377-0427 (print), 1879-1778 (electronic). URL `http://www.sciencedirect.com/science/article/pii/S0377042706007643`.

Okumura:1992:GHP

[OME+92] S. K. Okumura, J. Makino, T. Ebisuzaki, T. Ito, T. Fukushige, D. Sugimoto, E. Hashimoto, K. Tomida, and N. Miyakawa. GRAPE-3: highly parallelized special-purpose computer for gravitational many-body simulations. In IEEE, editor, *Proceedings of the Twenty-Fifth Hawaii International Conference on System Sciences, 1992*, pages 151–160. IEEE Computer Society Press, 1109 Spring Street, Suite 300, Silver Spring, MD 20910, USA, 1992.

Ohno:1994:DSP

[OMH+94] Y. Ohno, J. Makino, I. Hachisu, T. Ebisuzaki, and D. Sugimoto. DREAM-1A: special-purpose computer for computational fluid dynamics. In IEEE, editor, *Proceedings of the Twenty-Seventh Hawaii International Conference on System Sciences, 1994*, pages 282–291. IEEE Computer Society Press, 1109 Spring Street, Suite 300, Silver Spring, MD 20910, USA, 1994. URL `arnumber=323163; http://ieeexplore.ieee.org/stamp/stamp.jsp?tp=&amp`.

Otani:2008:FPB

[ON08a] Yoshihiro Otani and Naoshi Nishimura. An FMM for periodic boundary value problems for cracks for Helmholtz' equation in 2D. *International Journal for Numerical Methods in Engineering*, 73(3):381–406, 2008. CODEN IJNMBH. ISSN 0029-5981 (print), 1097-0207 (electronic).

Otani:2008:PFM

[ON08b] Yoshihiro Otani and Naoshi Nishimura. A periodic FMM for Maxwell's equations in 3D and its applications to problems related to photonic crystals. *Journal of Computational Physics*, 227(9):4630–4652, 2008. CODEN JCTPAH. ISSN 0021-9991 (print), 1090-2716 (electronic).

Otani:2009:BPF

[ON09a] Y. Otani and N. Nishimura. Behaviour of periodic fast multipole boundary integral equation method for Maxwell's equations near Wood's anomalies. In Habib Ammari et al., editors, *Imaging microstructures. Mathematical and computational challenges. Proceedings of a research conference, Paris,* *France, June 18–20, 2008*, volume 494 of *Contemporary Mathematics*, pages 43–59. American Mathematical Society, Providence, RI, USA, 2009.

Otani:2009:FOP

[ON09b] Yoshihiro Otani and Naoshi Nishimura. An FMM for orthotropic periodic boundary value problems for Maxwell's equations. *Waves in Random and Complex Media. Propagation, Scattering and Imaging*, 19(1):80–104, 2009. ISSN 1745-5030 (print), 1745-5049 (electronic).

Ormseth:2007:IFM

[OP07] Reid G. Ormseth and R. Pachter. Implementation of the fast multipole method in molecular dynamics. *Abstracts of Papers of the American Chemical Society*, 233(??):209, ???? 2007. CODEN ACSRAL. ISSN 0065-7727.

ODonnell:1989:FAN

[OR89] S. T. O'Donnell and V. Rokhlin. A fast algorithm for the numerical evaluation of conformal mappings. *SIAM Journal on Scientific and Statistical Computing*, 10(3):475–487, May 1989. CODEN SIJCD4. ISSN 0196-5204.

Of:2005:AFM

[OSW05] G. Of, O. Steinbach, and W. L. Wendland. Applications of a fast multipole Galerkin in boundary element method in linear elastostatics. *Computing and Visualization in Science*, 8(3-4):201–209, 2005. ISSN 1432-9360 (print), 1433-0369 (electronic).

Of:2006:FMM

[OSW06a] G. Of, O. Steinbach, and W. L. Wendland. The fast multipole method for the symmetric boundary integral formulation. *IMA Journal of Numerical Analysis*, 26(2):272–296, April 2006. CODEN IJNADH. ISSN 0272-4979 (print), 1464-3642 (electronic). URL `http://imanum.oxfordjournals.org/cgi/content/abstract/26/2/272`; `http://imanum.oxfordjournals.org/cgi/reprint/26/2/272`.

Of:2006:BET

[OSW06b] Günther Of, Olaf Steinbach, and Wolfgang L. Wendland. Boundary element tearing and interconnecting domain decomposition methods. In *Multifield problems in solid and fluid mechanics*, volume 28 of *Lect. Notes Appl. Comput. Mech.*, pages 461–490. Springer, Berlin, 2006.

Ohno:2014:PMD

[OYK+14] Yousuke Ohno, Rio Yokota, Hiroshi Koyama, Gentaro Morimoto, Aki Hasegawa, Gen Masumoto, Noriaki Okimoto, Yoshinori Hirano, Huda Ibeid, Tetsu Narumi, and Makoto

Taiji. Petascale molecular dynamics simulation using the fast multipole method on K computer. *Computer Physics Communications*, 185(10): 2575–2585, October 2014. CODEN CPHCBZ. ISSN 0010-4655 (print), 1879-2944 (electronic). URL `http://www.sciencedirect.com/science/article/pii/S0010465514002082`.

Pocek:2002:FAI

[PA02] Kenneth L. Pocek and Jeffrey Arnold, editors. *FCCM 2002: 10th Annual IEEE Symposium on Field-Programmable Custom Computing Machines: proceedings: 22–24 April, 2002, Napa, California*. IEEE Computer Society Press, 1109 Spring Street, Suite 300, Silver Spring, MD 20910, USA, 2002. ISBN 0-7695-1801-X. ISSN 1082-3409. LCCN TK7895.G36 I36 2002. URL `http://ieeexplore.ieee.org/servlet/opac?punumber=8168`.

Poursina:2014:IFM

[PA14] Mohammad Poursina and Kurt S. Anderson. An improved fast multipole method for electrostatic potential calculations in a class of coarse-grained molecular simulations. *Journal of Computational Physics*, 270(??): 613–633, August 1, 2014. CODEN JCTPAH. ISSN 0021-9991 (print), 1090-2716 (electronic). URL `http://www.sciencedirect.com/science/article/pii/S0021999114002885`.

Pan:1992:CCM

[Pan92] Victor Pan. Complexity of computations with matrices and polynomials. *SIAM Review*, 34(2):225–262, June 1992. CODEN SIREAD. ISSN 0036-1445 (print), 1095-7200 (electronic).

Panas:1995:PET

[Pan95] Itai Panas. Practical expressions for the two-center multipole expansion of $r \pm 1_{12}$. *International Journal of Quantum Chemistry*, 53(3): 255–263, February 5, 1995. CODEN IJQCB2. ISSN 0020-7608 (print), 1097-461X (electronic).

Park:1989:BBT

[PD89] S. C. Park and J. P. Draayer. Balanced binary tree code for scientific applications. *Computer Physics Communications*, 55(2):189–204, September 1989. CODEN CPHCBZ. ISSN 0010-4655 (print), 1879-2944 (electronic). URL `http://www.sciencedirect.com/science/article/pii/0010465589900763`.

Pouransari:2015:OAF

[PD15] Hadi Pouransari and Eric Darve. Optimizing the adaptive fast multipole method for fractal sets. *SIAM Journal on Scientific Computing*, 37 (2):A1040–A1066, ???? 2015.

CODEN SJOCE3. ISSN 1064-8275 (print), 1095-7197 (electronic).

Pellegrini:1998:EFS

[Pel98] Marco Pellegrini. Electrostatic fields without singularities: theory, algorithms and error analysis. *Journal of the ACM*, 45(6):924–964, November 1998. CODEN JACOAH. ISSN 0004-5411 (print), 1557-735X (electronic). URL `http://www.acm.org:80/pubs/citations/journals/jacm/1998-45-6/p924-pellegrini/`. The author compares his methods against fast multipole methods for point-to-volume integrals.

Pereira:1999:PBI

[Per99] N. S. A. Pereira. A parallel N-body integrator using MPI. *Lecture Notes in Computer Science*, 1573:627–639, 1999. CODEN LNCSD9. ISSN 0302-9743 (print), 1611-3349 (electronic).

Pfalzner:1994:HTC

[PG94] Susanne Pfalzner and Paul Gibbon. A 3D hierarchical tree code for dense plasma simulation. *Computer Physics Communications*, 79(1):24–38, February 1994. CODEN CPHCBZ. ISSN 0010-4655 (print), 1879-2944 (electronic). URL `http://www.sciencedirect.com/science/article/pii/0010465594900275`.

Pfalzner:1996:MBT

[PG96a] Susanne Pfalzner and Paul Gibbon. *Many-body tree methods in physics*. Cambridge University Press, Cambridge, UK, 1996. ISBN 0-521-49564-4 (hardcover), 0-511-52936-8 (electronic). ix + 168 pp. LCCN QC174.17.P7 P44 1996. URL `http://www.loc.gov/catdir/description/cam027/95036237.htm`; `http://www.loc.gov/catdir/toc/cam023/95036237.htm`.

Pollock:1996:CPF

[PG96b] E. L. Pollock and J. Glosli. Comments on P^3M, FMM, and the Ewald method for large periodic Coulombic systems. *Computer Physics Communications*, 95(2–3):93–110, June 1996. CODEN CPHCBZ. ISSN 0010-4655 (print), 1879-2944 (electronic).

Papa:2005:CMD

[PGB05] M. Papa, G. Giuliani, and A. Bonasera. Constrained molecular dynamics II: An N-body approach to nuclear systems. *Journal of Computational Physics*, 208(2):403–415, September 20, 2005. CODEN JCTPAH. ISSN 0021-9991 (print), 1090-2716 (electronic). URL `http://www.sciencedirect.com/science/article/pii/S0021999105000847`.

Pearce:2015:DLB

[PGG+15] Olga Pearce, Todd Gamblin,

Bronis R. de Supinski, Martin Schulz, and Nancy M. Amato. Decoupled load balancing. *ACM SIGPLAN Notices*, 50(8):267–268, August 2015. CODEN SINODQ. ISSN 0362-1340 (print), 1523-2867 (print), 1558-1160 (electronic).

Piecuch:1993:MSC

[Pie93] P. Piecuch. MAPLE symbolic computation of the long-range many-body intermolecular potentials: Three-body induction forces between two atoms and a linear molecule. *International Journal of Quantum Chemistry*, 47(4):261–305, 1993. CODEN IJQCB2. ISSN 0020-7608 (print), 1097-461X (electronic).

Perez-Jorda:1995:SAR

[PJY95] Jose M. Perez-Jorda and Weitao Yang. A simple $O(N \log N)$ algorithm for the rapid evaluation of particle-particle interactions. *Chemical Physics Letters*, 247(4–6): 484–490, December 29, 1995. CODEN CHPLBC. ISSN 0009-2614 (print), 1873-4448 (electronic).

Perez-Jorda:1996:CRS

[PJY96] Jose M. Perez-Jorda and Weitao Yang. A concise redefinition of the solid spherical harmonics and its use in fast multipole methods. *Journal of Chemical Physics*, 104 (20):8003–??, ???? 1996. CODEN JCPSA6. ISSN 0021-9606 (print), 1089-7690 (electronic).

Peirce:1995:SMM

[PN95] A. P. Peirce and J. A. L. Napier. A spectral multipole method for efficient solution of large-scale boundary element models in elastostatics. *International Journal for Numerical Methods in Engineering*, 38(23):4009–4034, ???? 1995. CODEN IJNMBH. ISSN 0029-5981 (print), 1097-0207 (electronic).

Pluta:1994:DHE

[PNB94] Tadeusz Pluta, Jozef Noga, and Rodney J. Bartlett. Determination of higher electric polarizability tensors from unrelaxed coupled cluster density matrix calculations of electric multipole moments. *International Journal of Quantum Chemistry. Symposium*, 28:379–393, 1994. CODEN IJQSAF. ISSN 0538-821X.

Pringle:1994:NST

[Pri94] Gavin J. Pringle. *Numerical Study of Three-Dimensional Flow using Fast Parallel Particle Algorithms*. Ph.d. thesis, Napier University, Edinburgh, Scotland, ???? 1994.

Pruett:2003:ABA

[PRL03] C. David Pruett, Joseph W. Rudmin, and Justin M. Lacy.

An adaptive N-body algorithm of optimal order. *Journal of Computational Physics*, 187(1):298–317, May 1, 2003. CODEN JCTPAH. ISSN 0021-9991 (print), 1090-2716 (electronic). URL `http://www.sciencedirect.com/science/article/pii/S0021999103001013`.

Pan:1992:PCT

[PRT92] V. Y. Pan, J. H. Reif, and S. R. Tate. The power of combining the techniques of algebraic and numerical computing: improved approximate multipoint polynomial evaluation and improved multipole algorithms. In IEEE [IEE92a], pages 703–713. CODEN ASFPDV. ISBN 0-8186-2901-0 (microfiche), 0-8186-2900-2 (paperback). ISSN 0272-5428. LCCN QA 76 S979 1992. IEEE Catalog Number 92CH3188-0. IEEE Computer Society Press Order Number 2900.

Potts:2004:FCR

[PSN04] Daniel Potts, Gabriele Steidl, and Arthur Nieslony. Fast convolution with radial kernels at nonequispaced knots. *Numerische Mathematik*, 98 (2):329–351, 2004. CODEN NUMMA7. ISSN 0029-599X (print), 0945-3245 (electronic).

Petersen:1994:VFM

[PSPS94] Henrik G. Petersen, Dorthe Soelvason, John W. Perram, and E. R. Smith. The very fast multipole method. *Journal of Chemical Physics*, 101 (10):8870–8876, November 15, 1994. CODEN JCPSA6. ISSN 0021-9606 (print), 1089-7690 (electronic).

Petersen:1995:EEFa

[PSPS95] Henrik G. Petersen, Dorthe Solvason, John W. Perram, and E. R. Smith. Error estimates for the fast multipole method. 1. the two-dimensional case. *Proceedings of the Royal Society of London. Series A, Mathematical and physical sciences*, 448(1934):389–400, March 8, 1995. CODEN PRLAAZ. ISSN 0080-4630.

Petersen:1995:EEFb

[PSS95] Henrik G. Petersen, E. R. Smith, and Dorthe Solvason. Error-estimates for the fast multipole method. 2. the three-dimensional case. *Proceedings of the Royal Society of London. Series A, Mathematical and physical sciences*, 448(1934):401–418, March 8, 1995. CODEN PRLAAZ. ISSN 0080-4630.

Ptaszny:2021:FMB

[Pta21] Jacek Ptaszny. A fast multipole BEM with higher-order elements for 3-D composite materials. *Computers and Mathematics with Applications*, 82(??):148–160, January 15, 2021. CODEN CMAPDK. ISSN

0898-1221 (print), 1873-7668 (electronic). URL http://www.sciencedirect.com/science/article/pii/S0898122120304363.

Pudlak:2016:LTC

[Pud16] Pavel Pudlák. Linear tree codes and the problem of explicit constructions. *Linear Algebra and its Applications*, 490(??):124–144, February 1, 2016. CODEN LAAPAW. ISSN 0024-3795 (print), 1873-1856 (electronic). URL http://www.sciencedirect.com/science/article/pii/S002437951500645X.

Qu:2015:FMA

[QCG15] Wenzhen Qu, Wen Chen, and Yan Gu. Fast multipole accelerated singular boundary method for the 3D Helmholtz equation in low frequency regime. *Computers and Mathematics with Applications*, 70(4):679–690, August 2015. CODEN CMAPDK. ISSN 0898-1221 (print), 1873-7668 (electronic). URL http://www.sciencedirect.com/science/article/pii/S0898122115002400.

Rahola:1996:DFT

[Rah96] Jussi Rahola. Diagonal forms of the translation operators in the fast multipole algorithm for scattering problems. *BIT Numerical Mathematics*, 36(2):333–358, June 1996. CODEN BITTEL, NBITAB. ISSN 0006-3835 (print), 1572-9125 (electronic). URL http://www.mai.liu.se/BIT/contents/bit36.html; http://www.springerlink.com/openurl.asp?genre=article&issn=0006-3835&volume=36&issue=2&spage=333.

Rajamony:1997:PDS

[RC97] Ramakrishnan Rajamony and Alan L. Cox. Performance debugging shared memory parallel programs using run-time dependence analysis. *ACM SIGMETRICS Performance Evaluation Review*, 25(1):75–87, June 1997. CODEN ???? ISSN 0163-5999 (print), 1557-9484 (electronic).

Rui:2007:STS

[RCWY07] Ping-Liang Rui, Ru-Shan Chen, Dao-Xiang Wang, and Edward Kai-Ning Yung. Spectral two-step preconditioning of multilevel fast multipole algorithm for the fast monostatic RCS calculation. *IEEE Transactions on Antennas and Propagation*, 55(8):2268–2275, 2007. CODEN IETPAK. ISSN 0018-926x (print), 1558-2221 (electronic).

Reif:1999:ACP

[Rei99] John H. Reif. Approximate complex polynomial evaluation in near constant work per point. *SIAM Journal on Computing*, 28(6):2059–2089, 1999. CODEN SMJCAT. ISSN 0097-5397 (print), 1095-7111 (electronic).

Razavi:2012:ALS

[RGKM12] Seyed Naser Razavi, Nicolas Gaud, Abderrafiâa Koukam, and Naser Mozayani. An automatic learning system to derive multipole and local expansions for the Fast Multipole Method. *Lecture Notes in Computer Science*, 7332:1–10, 2012. CODEN LNCSD9. ISSN 0302-9743 (print), 1611-3349 (electronic). URL `http://link.springer.com/chapter/10.1007/978-3-642-31020-1_1/`.

Rejwer-Kosinska:2021:ELF

[RKRRL21] Ewa Rejwer-Kosińska, Liliana Rybarska-Rusinek, and Aleksandr Linkov. On evaluation of local fields by fast multipole method employing smooth equivalent/check surfaces. *Applied Mathematics and Computation*, 408(??):??, November 1, 2021. CODEN AMHCBQ. ISSN 0096-3003 (print), 1873-5649 (electronic). URL `http://www.sciencedirect.com/science/article/pii/S0096300321004525`.

Rejwer-Kosinska:2022:ATK

[RKRRL22] Ewa Rejwer-Kosińska, Liliana Rybarska-Rusinek, and Aleksandr Linkov. On accuracy of translations by kernel independent fast multipole methods. *Computers and Mathematics with Applications*, 124(??):227–240, October 15, 2022. CODEN CMAPDK. ISSN 0898-1221 (print), 1873-7668 (electronic). URL `http://www.sciencedirect.com/science/article/pii/S0898122122003534`.

Rodin:2004:PCP

[RO04] Gregory J. Rodin and James R. Overfelt. Periodic conduction problems: the fast multipole method and convergence of integral equations and lattice sums. *Proceedings of the Royal Society A: Mathematical, Physical, & Engineering Sciences*, 460(2050):2883–2902, 2004. CODEN PRLAAZ. ISSN 1364-5021 (print), 1471-2946 (electronic).

Rodrigue:1989:PPS

[Rod89] Garry Rodrigue, editor. *Parallel processing for scientific computing: Proceedings of the Third SIAM Conference held in Los Angeles, California, December 1–4, 1987*. Society for Industrial and Applied Mathematics, Philadelphia, PA, USA, 1989. ISBN 0-89871-228-9. LCCN QA76.5 .C61921 1987.

Rokhlin:1985:RSI

[Rok85] V. Rokhlin. Rapid solution of integral equations of classical potential theory. *Journal of Computational Physics*, 60(2):187–207, September 15, 1985. CODEN JCTPAH. ISSN 0021-9991 (print), 1090-2716 (electronic). URL `http://www.sciencedirect.com/science/article/pii/0021999185900026`.

Rokhlin:1990:RSI

[Rok90] Vladimir Rokhlin. Rapid solution of integral equations of scattering theory in two dimensions. *Journal of Computational Physics*, 86 (2):414–439, February 1990. CODEN JCTPAH. ISSN 0021-9991 (print), 1090-2716 (electronic). URL http://www.sciencedirect.com/science/article/pii/002199919090107C.

Rokhlin:1998:SDF

[Rok98] V. Rokhlin. Sparse diagonal forms for translation operators for the Helmholtz equation in two dimensions. *Applied and Computational Harmonic Analysis. Time-Frequency and Time-Scale Analysis, Wavelets, Numerical Algorithms, and Applications*, 5(1):36–67, 1998. ISSN 1063-5203 (print), 1096-603x (electronic).

Rossi:2006:EBS

[Ros06] Louis F. Rossi. Evaluation of the Biot–Savart integral for deformable elliptical Gaussian vortex elements. *SIAM Journal on Scientific Computing*, 28(4):1509–1532, 2006. CODEN SJOCE3. ISSN 1064-8275 (print), 1095-7197 (electronic).

Ramachandran:2003:FTD

[RRR03] Prabhu Ramachandran, S. C. Rajan, and M. Ramakrishna. A fast, two-dimensional panel method. *SIAM Journal on Scientific Computing*, 24 (6):1864–1878, 2003. CODEN SJOCE3. ISSN 1064-8275 (print), 1095-7197 (electronic).

Ramachandran:2005:FMM

[RRR05] Prabhu Ramachandran, S. C. Rajan, and M. Ramakrishna. A fast multipole method for higher order vortex panels in two dimensions. *SIAM Journal on Scientific Computing*, 26(5):1620–1642, September 2005. CODEN SJOCE3. ISSN 1064-8275 (print), 1095-7197 (electronic). URL http://epubs.siam.org/sam-bin/dbq/article/42071.

Russo:1994:FTV

[RS94] Giovanni Russo and John A. Strain. Fast triangulated vortex methods for the 2D Euler equations. *Journal of Computational Physics*, 111(2):291–323, April 1994. CODEN JCTPAH. ISSN 0021-9991 (print), 1090-2716 (electronic). URL http://www.sciencedirect.com/science/article/pii/S0021999184710655.

Rokhlin:1997:SFM

[RS97] Vladimir Rokhlin and Mark A. Stalzer. Scalability of the fast multipole method for the Helmholtz equation. In Heath et al. [HTA+97], page 8. CODEN PSSCFK. ISBN 0-89871-395-1. LCCN ???? CD-ROM for Windows, Macintosh and UNIX; no paper form published.

Rudberg:2006:EIF

[RS06] Elias Rudberg and Pawel Salek. Efficient implementation of the fast multipole method. *Journal of Chemical Physics*, 125(8):084106, August 28, 2006. CODEN JCPSA6. ISSN 0021-9606 (print), 1089-7690 (electronic).

Rapaka:2020:EPS

[RS20] Narsimha Reddy Rapaka and Ravi Samtaney. An efficient Poisson solver for complex embedded boundary domains using the multi-grid and fast multipole methods. *Journal of Computational Physics*, 410(??):Article 109387, June 1, 2020. CODEN JCTPAH. ISSN 0021-9991 (print), 1090-2716 (electronic). URL `http://www.sciencedirect.com/science/article/pii/S0021999120301613`.

Rezaei:2019:AFM

[RSBS19] Ali Rezaei, Fahd Siddiqui, Giorgio Bornia, and Mohammed Soliman. Applications of the fast multipole fully coupled poroelastic displacement discontinuity method to hydraulic fracturing problems. *Journal of Computational Physics*, 399(??):Article 108955, December 15, 2019. CODEN JCTPAH. ISSN 0021-9991 (print), 1090-2716 (electronic). URL `https://www.sciencedirect.com/science/article/pii/S0021999119306606`.

Renegar:1996:MNA

[RSS96] James Renegar, Michael Shub, and Steve Smale, editors. *The mathematics of numerical analysis: 1995 AMS–SIAM Summer Seminar in Applied Mathematics, July 17–August 11, 1995, Park City, Utah*, volume 32 of *Lectures in Applied Mathematics — American Mathematical Society*. American Mathematical Society, Providence, RI, USA, 1996. ISBN 0-8218-0530-4. ISSN 0075-8485. LCCN QA297 .A57 1995.

Ravnik:2009:CBW

[RŠŽ09] J. Ravnik, L. Škerget, and Z. Žunič. Comparison between wavelet and fast multipole data sparse approximations for Poisson and kinematics boundary—domain integral equations. *Computer Methods in Applied Mechanics and Engineering*, 198(17-20):1473–1485, 2009. CODEN CMMECC. ISSN 0045-7825, 0374-2830.

Rodriguez:2008:USV

[RTA+08] José Luis Rodriguez, Jose Manuel Taboada, Marta G. Araújo, Fernando Obelleiro Basteiro, Luis Landesa, and Inés García-Tuñón. On the use of the singular value decomposition in the fast multipole method. *IEEE Transactions on Antennas and Propagation*, 56(8, part 1):2325–2334, 2008. CODEN IETPAK. ISSN 0018-926x (print), 1558-2221 (electronic).

Ringbom:1996:FSG

[RTZ+96] A. Ringbom, G. Tibell, R. Zorro, J. Blomgren, H. Conde, K. Elmgren, S. Hultqvist, J. Nilsson, N. Olsson, C. Fahlander, L. Nilsson, J. Nyberg, D. Reistad, P.-U. Renberg, L. Westerberg, A. Likar, and S. Wender. A facility for studies of giant multipole resonances by fast heavy-ion scattering. *Nuclear instruments and methods in physics research. Section A, Accelerators, spectrometers, detectors and associated equipment*, 373(1): 57–??, ???? 1996. CODEN NIMAER. ISSN 0168-9002, 0167-5087.

Rokhlin:1994:FMM

[RW94] V. Rokhlin and S. M. Wandzura. The fast multipole method for periodic structures. In IEEE [IEE94a], pages 424–426. ISBN 0-7803-2010-7, 0-7803-2009-3, 0-7803-2011-5. ISSN 1064-3125. LCCN TK7871.6 .A55823 1994. Three volumes.

Salmon:1996:GCC

[Sal96] John Salmon. Generation of correlated and constrained Gaussian stochastic processes for N-body simulations. *Astrophysical Journal*, 460(1//1):59–??, 1996. CODEN ASJOAB. ISSN 0004-637X (print), 1538-4357 (electronic).

Sarvas:2003:PIA

[Sar03] Jukka Sarvas. Performing interpolation and anterpolation entirely by fast Fourier transform in the 3-D multilevel fast multipole algorithm. *SIAM Journal on Numerical Analysis*, 41(6):2180–2196, 2003. CODEN SJNAAM. ISSN 0036-1429 (print), 1095-7170 (electronic).

Sato:2010:AFS

[Sat10] Akira Sato. Analysis of finite-sized guided-mode resonant gratings using the fast multipole boundary element method. *Journal of the Optical Society of America. A, Optics, image science, and vision*, 27(9):1909–1919, September 1, 2010. CODEN JOAOD6. ISSN 1520-8532.

Strickland:1996:POF

[SB96] James H. Strickland and Roy S. Baty. A pragmatic overview of fast multipole methods. In Renegar et al. [RSS96], pages 807–830. ISBN 0-8218-0530-4. ISSN 0075-8485. LCCN QA297 .A57 1995.

Strickland:1998:MCG

[SB98] James H. Strickland and Roy S. Baty. Modification of the Carrier, Greengard, and Rokhlin FMM for independent source and target fields. *Journal of Computational Physics*, 142(1):123–128, May 1, 1998. CODEN JCTPAH. ISSN 0021-9991 (print), 1090-2716 (electronic). URL `http://www.sciencedirect.com/science/article/pii/S0021999198959071`.

Song:1994:FMM

[SC94] J. M. Song and W. C. Chew. Fast multipole method solution using parametric geometry. *Microwave and Optical Technology Letters*, 7(16): 760–765, November 1994. CODEN MOTLEO. ISSN 0895-2477 (print), 1098-2760 (electronic).

Song:1995:FMM

[SC95] J. M. Song and W. C. Chew. Fast multipole method solution of three dimensional integral equation. In IEEE [IEE95], pages 1528–1531. ISBN 0-7803-2720-9. LCCN TK 7871.6 A2 1995. Four volumes. IEEE catalog number: 95CH35814.

Schmitt:1994:CDF

[Sch94] H. Schmitt. Contour dynamics and the fast multipole method. *SIAM Journal on Scientific Computing*, 15 (4):997–1001, July 1994. CODEN SJOCE3. ISSN 1064-8275 (print), 1095-7197 (electronic).

Sugimoto:1990:SPC

[SCM+90] D. Sugimoto, Y. Chikada, J. Makino, T. Ito, T. Ebisuzaki, and M. Umemura. A special-purpose computer for gravitational many-body problems. *Nature*, 345(6270):33–35, May 3, 1990. CODEN NATUAS. ISSN 0028-0836 (print), 1476-4687 (electronic). URL `http://www.nature.com/nature/journal/v345/n6270/pdf/345033a0.pdf`.

Sellountos:2022:FMB

[Sel22] Euripides J. Sellountos. Fast multipole boundary element method (FMM/BEM) for the solution of the Navier–Stokes in primitive variables based on the Burton and Miller formulation in two-dimensions. *Journal of Computational Physics*, 471 (??):??, December 15, 2022. CODEN JCTPAH. ISSN 0021-9991 (print), 1090-2716 (electronic). URL `http://www.sciencedirect.com/science/article/pii/S0021999122006787`.

Sakuraba:2018:PEZ

[SF18] Shun Sakuraba and Ikuo Fukuda. Performance evaluation of the zero-multipole summation method in modern molecular dynamics software. *Journal of Computational Chemistry*, 39(20): 1551–1560, July 30, 2018. CODEN JCCHDD. ISSN 0192-8651 (print), 1096-987X (electronic).

Sendur:1997:SRP

[SG97] I. K. Sendur and L. Guerel. Solution of radiation problems using the fast multipole method. In IEEE [IEE97], pages 4–11. ISBN 0-7803-4179-1, 0-7803-4178-3, 0-7803-4180-5, 0-7803-4181-3. LCCN TK7871.6.I39 1997. Four volumes. IEEE catalog number: 97CH36122.

Sabariego:2004:CME

[SGD+04] R. V. Sabariego, J. Gyselinck, P. Dular, J. De Coster, F. Henrotte, and K. Hameyer. Coupled mechanical-electrostatic FE–BE analysis with FMM acceleration: application to a shunt capacitive MEMS switch. *COMPEL*, 23(4):876–884, 2004. ISSN 0332-1649.

Sabariego:2004:AFM

[SGG+04] R. V. Sabariego, J. Gyselinck, C. Geuzaine, P. Dular, and W. Legros. Application of the fast multipole method to hybrid finite element-boundary element models. *Journal of Computational and Applied Mathematics*, 168(1–2):403–412, July 1, 2004. CODEN JCAMDI. ISSN 0377-0427 (print), 1879-1778 (electronic). URL `http://www.sciencedirect.com/science/article/pii/S0377042703009841`.

Shanker:2007:ACE

[SH07] B. Shanker and H. Huang. Accelerated Cartesian expansions — a fast method for computing of potentials of the form $R^{-\nu}$ for all real ν. *Journal of Computational Physics*, 226(1):732–753, 2007. CODEN JCTPAH. ISSN 0021-9991 (print), 1090-2716 (electronic).

Sharp:2006:BSP

[Sha06] Philip W. Sharp. N-body simulations: The performance of some integrators. *ACM Transactions on Mathematical Software*, 32(3):375–395, September 2006. CODEN ACMSCU. ISSN 0098-3500 (print), 1557-7295 (electronic).

Singh:1995:IHB

[SHG95] Jaswinder Pal Singh, John L. Hennessy, and Anoop Gupta. Implications of hierarchical N-body methods for multiprocessor architectures. *ACM Transactions on Computer Systems*, 13(2):141–202, May 1995. CODEN ACSYEC. ISSN 0734-2071 (print), 1557-7333 (electronic). URL `http://www.acm.org:80/pubs/citations/journals/tocs/1995-13-2/p141-singh/`.

Singh:1993:PAF

[SHHG93] Jaswinder P. Singh, Chris Holt, John L. Hennessy, and Anoop Gupta. A parallel adaptive fast multipole method. In IEEE [IEE93], pages 54–67. ISBN 0-8186-

4340-4 (paperback), 0-8186-4341-2 (microfiche), 0-8186-4342-0 (hardback), 0-8186-4346-3 (CD-ROM). ISSN 1063-9535. LCCN QA76.5 .S96 1993.

Shanker:1998:FMA

[SHM98] Balasubramanian Shanker, Sang-Kyun Han, and Eric Michielssen. A fast multipole approach to analyze scattering from an inhomogeneous bianisotropic cylindrical object embedded in a chiral host. *Radio Science*, 33(1):17–??, ???? 1998. CODEN RASCAD. ISSN 0048-6604 (print), 1944-799x (electronic). Paper 97RS02469.

Shanker:1997:FMA

[SHMC97] B. Shanker, S.-K. Han, E. Michielssen, and W. C. Chew. A fast multipole approach to computing scattering from an inhomogeneous bianisotropic cylindrical object using Beltrami fields. In IEEE [IEE97], page 43.8. ISBN 0-7803-4179-1, 0-7803-4178-3, 0-7803-4180-5, 0-7803-4181-3. LCCN TK7871.6.I39 1997. Four volumes. IEEE catalog number: 97CH36122.

Singh:1995:LBD

[SHT+95] Jaswinder Pal Singh, Chris Holt, Takashi Totsuka, Anoop Gupta, and John Hennessy. Load balancing and data locality in adaptive hierarchical N-body methods: Barnes–Hut, fast multipole, and radiosity. *Journal of Parallel and Distributed Computing*, 27(2):118–141, June 1995. CODEN JPDCER. ISSN 0743-7315 (print), 1096-0848 (electronic). URL `http://www.idealibrary.com/links/doi/10.1006/jpdc.1995.1077/production; http://www.idealibrary.com/links/doi/10.1006/jpdc.1995.1077/production/pdf; https://www.math.utah.edu/pub/tex/bib/jpardistcomp.bib`.

Singh:1992:IHB

[Sin92] Jaswinder Pal Singh. Implications of hierarchical N-body methods for multiprocessor architecture. *ACM SIGARCH Computer Architecture News*, 20(2):436, May 1992. CODEN CANED2. ISSN 0163-5964 (ACM), 0884-7495 (IEEE).

Singer:1995:PIF

[Sin95] J. K. Singer. Parallel implementation of the fast multipole method with periodic boundary conditions. *East-West Journal of Numerical Mathematics*, 3(3):199–216, 1995. CODEN EJNMEA. ISSN 0928-0200.

Suda:2004:APA

[SK04] Reiji Suda and Shingo Kuriyama. Another preprocessing algorithm for generalized one-dimensional fast multipole method. *Journal of Computational Physics*, 195(2):790–803, 2004. CODEN JCTPAH. ISSN 0021-9991 (print), 1090-2716 (electronic).

Skeel:1989:MDS

[Ske89] Robert D. Skeel. Macromolecular dynamics on a shared-memory multiprocessor. Technical Report CSRD 929; Numerical Computing Group 89-5, University of Illinois at Urbana-Champaign, Center for Supercomputing Research and Development, Urbana, IL 61801, USA, October 1989. 15 pp.

Solvason:1995:RCE

[SKPP95] D. Solvason, J. Kolafa, H. G. Petersen, and J. W. Perram. A rigorous comparison of the Ewald method and the fast multipole method in two dimensions. *Computer Physics Communications*, 87 (3):307–318, June 1995. CODEN CPHCBZ. ISSN 0010-4655 (print), 1879-2944 (electronic).

Shimada:1993:ECC

[SKT93] Jiro Shimada, Hiroki Kaneko, and Toshikazu Takada. Efficient calculations of Coulombic interactions in biomolecular simulations with periodic boundary conditions. *Journal of Computational Chemistry*, 14(7):867–878, July 1993. CODEN JCCHDD. ISSN 0192-8651 (print), 1096-987X (electronic).

Shimada:1994:PFM

[SKT94] Jiro Shimada, Hiroki Kaneko, and Toshikazu Takada. Performance of fast multipole methods for calculating electrostatic interactions in biomacromolecular simulations. *Journal of Computational Chemistry*, 15(1): 28–43, January 1994. CODEN JCCHDD. ISSN 0192-8651 (print), 1096-987X (electronic).

Schmidt:1991:IFM

[SL91] K. E. Schmidt and Michael A. Lee. Implementing the Fast Multipole Method in three dimensions. *Journal of Statistical Physics*, 63(5–6):1223–1235, June 1991. CODEN JSTPSB. ISSN 0022-4715 (print), 1572-9613 (electronic). URL `http://link.springer.com/article/10.1007/BF01030008`. See erratum [SL97a].

Schmidt:1997:EIF

[SL97a] K. E. Schmidt and Michael A. Lee. Erratum: Implementing the fast multipole method in three dimensions. *Journal of Statistical Physics*, 87 (3–4):955, May 1997. CODEN JSTPSB. ISSN 0022-4715 (print), 1572-9613 (electronic). URL `http://link.springer.com/article/10.`

1007/BF02181257. See [SL91].

Schmidt:1997:MES

[SL97b] K. E. Schmidt and Michael A. Lee. Multipole Ewald sums for the fast multipole method. *Journal of Statistical Physics*, 89(1–2):411–424, October 1997. CODEN JSTPSB. ISSN 0022-4715 (print), 1572-9613 (electronic). URL `http://link.springer.com/article/10.1007/BF02770773`.

Song:1996:MFM

[SLC96] J. M. Song, C. C. Lu, and W. C. Chew. Multilevel fast multipole algorithm (MLFMA) for complex objects. In IEEE [IEE96a], pages 1730–1733. ISBN 0-7803-3217-2 (casebound), 0-7803-3216-4 (softbound), 0-7803-3218-0 (microfiche). LCCN TK7871.6.A68 1996. Three volumes.

Song:1997:MFM

[SLC97] J. Song, C-C Lu, and W. C. Chew. Multilevel fast multipole algorithm for electromagnetic scattering by large complex objects. *IEEE Transactions on Antennas and Propagation*, 45(10):1488–1493, October 1997. CODEN IETPAK. ISSN 0018-926x (print), 1558-2221 (electronic).

Song:1998:FISa

[SLCL98a] J. M. Song, C. C. Lu, W. C. Chew, and S. W. Lee. Fast Illinois Solver Code (FISC). *IEEE Antennas and Propagation Magazine*, 40(3):27–34, June 1998. CODEN IAPMEZ. ISSN 1045-9243 (print), 1558-4143 (electronic).

Song:1998:FISb

[SLCL98b] J. M. Song, C. C. Lu, W. C. Chew, and S. W. Lee. Fast Illinois Solver Code (FISC). *Annual Review of Progress in Applied Computational Electromagnetics*, 2(??):966–973, 1998.

Shanker:1997:OSI

[SM97] Balasubramaniam Shanker and Eric Michielssen. Oblique scattering from an inhomogeneous chiral cylindrical object with use of axial Beltrami fields and the fast multipole method. *Journal of the Optical Society of America. A, Optics, image science, and vision*, 14(10):2786–??, ???? 1997. CODEN JOAOD6. ISSN 0740-3232.

Simos:2005:ACM

[SM05] Theodore Simos and George Maroulis, editors. *Advances in computational methods in sciences and engineering 2005*, volume 4 of *Lecture Series on Computer and Computational Sciences*. VSP, Utrecht, 2005. ISBN 90-6764-444-7. i–viii + 1057–1905 pp. Selected papers from the International Conference of Computational Methods in Sciences and Engineering (IC-

CMSE 2005) held in Loutraki, October 21–26, 2005.

Shanker:1997:SIC

[SMC97] B. Shanker, E. Michielssen, and W. C. Chew. Scattering from inhomogeneous chiral cylindrical composites using axial Beltrami fields and the fast multipole method. In Anonymous [Ano97a], pages 774–780. AD Reports -NTIS-AD A 1997; AD-A329118.

Solvason:1997:EEF

[SP97] Dorth Sølvason and Henrik G. Petersen. Error estimates for the fast multipole method. *Journal of Statistical Physics*, 86(1–2): 391–420, January 1997. CODEN JSTPSB. ISSN 0022-4715 (print), 1572-9613 (electronic). URL http://link.springer.com/article/10.1007/BF02180212.

Sidonio:1999:PBI

[SP99] N. Sidonio and A. Pereira. A parallel N-body integrator using MPI. *Lecture Notes in Computer Science*, 1573:627–??, 1999. CODEN LNCSD9. ISSN 0302-9743 (print), 1611-3349 (electronic).

Sun:2001:MVF

[SP01] Xiaobai Sun and Nikos P. Pitsianis. A matrix version of the fast multipole method. *SIAM Review*, 43(2):289–300, June 2001. CODEN SIREAD. ISSN 0036-1445 (print), 1095-7200 (electronic). URL http://epubs.siam.org/sam-bin/dbq/article/37083.

Springel:2005:CSC

[Spr05] V. Springel. The cosmological simulation code GADGET-2. *Monthly Notices of the Royal Astronomical Society*, 364(??):1105–1134, December 2005. CODEN MNRAA4. ISSN 0035-8711 (print), 1365-2966 (electronic).

Scherbinin:1996:UME

[SPS96] A. V. Scherbinin, V. I. Pupyshev, and N. F. Stepanov. On the use of multipole expansion of the Coulomb potential in quantum chemistry. *International Journal of Quantum Chemistry*, 60(4):843–??, ???? 1996. CODEN IJQCB2. ISSN 0020-7608 (print), 1097-461X (electronic).

Speck:2012:MST

[SRK+12] R. Speck, D. Ruprecht, R. Krause, M. Emmett, M. Minion, M. Winkel, and P. Gibbon. A massively space-time parallel N-body solver. In Hollingsworth [Hol12], pages 92:1–92:11. ISBN 1-4673-0804-8. URL http://conferences.computer.org/sc/2012/papers/1000a083.pdf.

Sagui:2006:NDM

[SRPD06] Celeste Sagui, Christopher Roland, Lee G. Pedersen, and

Thomas A. Darden. New distributed multipole methods for accurate electrostatics in large-scale biomolecular simulations. In Leimkuhler et al. [LCE+06], pages 297–312. CODEN LNCSA6. ISBN 3-540-25542-7 (print), 3-540-31618-3 (e-book). ISSN 1439-7358. LCCN QP517.M3 N49 2006. URL http://link.springer.com/content/pdf/10.1007/3-540-31618-3_16. Papers from the fourth edition of *Algorithms for Macromolecular Modelling*, Leicester, UK August 2004.

Saad:1989:DCH

[SS89] Y. Saad and M. H. Schultz. Data communication in hypercubes. *Journal of Parallel and Distributed Computing*, 6(1):115–135, February 1989. CODEN JPDCER. ISSN 0743-7315 (print), 1096-0848 (electronic).

Schanz:2007:BEA

[SS07] Martin Schanz and Olaf Steinbach, editors. *Boundary element analysis*, volume 29 of *Lecture Notes in Applied and Computational Mechanics*. Springer, Berlin, 2007. ISBN 3-540-47465-X. x + 354 pp. Mathematical aspects and applications.

Strain:1996:ALS

[SSF96] Matthew C. Strain, Gustavo E. Scuseria, and Michael J. Frisch. Achieving linear scaling for the electronic quantum Coulomb problem. *Science*, 271(5245):51–53, January 5, 1996. CODEN SCIEAS. ISSN 0036-8075 (print), 1095-9203 (electronic).

Suda:2002:FSH

[ST02] Reiji Suda and Masayasu Takami. A fast spherical harmonics transform algorithm. *Mathematics of Computation*, 71(238):703–715, 2002. CODEN MCMPAF. ISSN 0025-5718 (print), 1088-6842 (electronic).

Schwab:2006:KLA

[ST06] Christoph Schwab and Radu Alexandru Todor. Karhunen–Loève approximation of random fields by generalized fast multipole methods. *Journal of Computational Physics*, 217 (1):100–122, September 1, 2006. CODEN JCTPAH. ISSN 0021-9991 (print), 1090-2716 (electronic). URL http://www.sciencedirect.com/science/article/pii/S0021999106000349.

Stalzer:1995:PFMb

[Sta95a] M. A. Stalzer. Parallelizing the fast multipole method for the Helmholtz equation. In Bailey et al. [B+95], pages 325–330. ISBN 0-89871-344-7. LCCN QA76.58.S55 1995.

Stalzer:1995:PFMa

[Sta95b] Mark A. Stalzer. A parallel fast multipole method for the Helmholtz equation. *Parallel Processing Letters*, 5(2): 263–274, June 1995. CODEN PPLTEE. ISSN 0129-6264 (print), 1793-642X (electronic).

Sun:2014:FMR

[STZ14] Timothy Sun, Papoj Thamjaroenporn, and Changxi Zheng. Fast multipole representation of diffusion curves and points. *ACM Transactions on Graphics*, 33(4): 53:1–53:??, July 2014. CODEN ATGRDF. ISSN 0730-0301 (print), 1557-7368 (electronic).

Suda:2004:SAF

[Sud04] Reiji Suda. Stability analysis of the fast Legendre transform algorithm based on the fast multipole method. *Proc. Estonian Acad. Sci. Phys. Math.*, 53(2):107–115, 2004. ISSN 1406-0086.

Salmon:1994:STC

[SW94] John K. Salmon and Michael S. Warren. Skeletons from the treecode closet. *Journal of Computational Physics*, 111 (1):136–155, March 1994. CODEN JCTPAH. ISSN 0021-9991 (print), 1090-2716 (electronic). URL ftp://ftp.cacr.caltech.edu/nbody/skeletons.ps.Z; http://www.ccsf.caltech.edu/~johns/ftp/nbody/skeletons.ps.Z; http://www.sciencedirect.com/science/article/pii/S0021999184710503.

Springel:2005:SFE

[SWJ+05] V. Springel, S. D. M. White, A. Jenkins, C. S. Frenk, N. Yoshida, L. Gao, J. Navarro, R. Thacker, D. Croton, J. Helly, J. A. Peacock, S. Cole, P. Thomas, H. Couchman, A. Evrard, J. Colberg, and F. Pearce. Simulations of the formation, evolution and clustering of galaxies and quasars. *Nature*, 435(7042):629–636, June 2, 2005. CODEN NATUAS. ISSN 0028-0836 (print), 1476-4687 (electronic). URL http://www.nature.com/nature/journal/v435/n7042/full/nature03597.html.

Salmon:1994:FPT

[SWW94] John K. Salmon, Michael S. Warren, and Gregoire S. Winckelmans. Fast parallel tree codes for gravitational and fluid dynamical N-body problems. *The International Journal of Supercomputer Applications*, 8(2):129–142, Summer 1994. CODEN IJSAE9. ISSN 0890-2720. URL ftp://ftp.cacr.caltech.edu/nbody/ijsa.ps.Z; ftp://ftp.cacr.caltech.edu/nbody/ijsanofig.ps.Z.

Schwichtenberg:1999:AMM

[SWW99] H. Schwichtenberg, G. Winter, and H. Wallmeier. Acceleration of molecular mechanic simulation by parallelization and fast multipole techniques. *Parallel Com-*

puting, 25(5):535–546, May 1, 1999. CODEN PACOEJ. ISSN 0167-8191 (print), 1872-7336 (electronic). URL `http://www.elsevier.com/cas/tree/store/parco/sub/1999/25/5/1406.pdf`.

Sylvand:2003:CIC

[Syl03] Guillaume Sylvand. Complex industrial computations in electromagnetism using the fast multipole method. In *Mathematical and numerical aspects of wave propagation—WAVES 2003*, pages 657–662. Springer-Verlag, Berlin, Germany / Heidelberg, Germany / London, UK / etc., 2003.

Takahashi:2014:IBF

[Tak14] Toru Takahashi. An interpolation-based fast-multipole accelerated boundary integral equation method for the three-dimensional wave equation. *Journal of Computational Physics*, 258(??):809–832, February 1, 2014. CODEN JCTPAH. ISSN 0021-9991 (print), 1090-2716 (electronic). URL `http://www.sciencedirect.com/science/article/pii/S0021999113007584`.

Tausch:2003:SBP

[Tau03a] J. Tausch. Sparse BEM for potential theory and Stokes flow using variable order wavelets. *Computational mechanics*, 32(4-6):312–318, 2003. CODEN CMMEEE. ISSN 0178-7675 (print), 1432-0924 (electronic).

Tausch:2003:FMM

[Tau03b] Johannes Tausch. The fast multipole method for arbitrary Green's functions. In *Current trends in scientific computing (Xi'an, 2002)*, volume 329 of *Contemp. Math.*, pages 307–314. American Mathematical Society, Providence, RI, USA, 2003.

Tausch:2004:VOF

[Tau04] J. Tausch. The variable order fast multipole method for boundary integral equations of the second kind. *Computing: Archiv für informatik und numerik*, 72(3-4):267–291, 2004. CODEN CMPTA2. ISSN 0010-485X (print), 1436-5057 (electronic).

Tong:2009:MFM

[TC09] Mei Song Tong and Weng Cho Chew. Multilevel fast multipole algorithm for elastic wave scattering by large three-dimensional objects. *Journal of Computational Physics*, 228(3):921–932, February 20, 2009. CODEN JCTPAH. ISSN 0021-9991 (print), 1090-2716 (electronic). URL `http://www.sciencedirect.com/science/article/pii/S0021999108005330`.

Takahashi:2017:AIF

[TCD17] Toru Takahashi, Pieter Coulier, and Eric Darve. Application of the inverse fast multipole method as a preconditioner in a 3D Helmholtz boundary element method. *Journal of Computational Physics*, 341 (??):406–428, July 15, 2017. CODEN JCTPAH. ISSN 0021-9991 (print), 1090-2716 (electronic). URL `http://www.sciencedirect.com/science/article/pii/S0021999117302875`.

Takahashi:2020:PIF

[TCD20] Toru Takahashi, Chao Chen, and Eric Darve. Parallelization of the inverse fast multipole method with an application to boundary element method. *Computer Physics Communications*, 247 (??):Article 106975, February 2020. CODEN CPHCBZ. ISSN 0010-4655 (print), 1879-2944 (electronic). URL `http://www.sciencedirect.com/science/article/pii/S0010465519303194`.

Tong:2008:MFM

[TCW08] Mei Song Tong, Weng Cho Chew, and Michael J. White. Multilevel fast multipole algorithm for acoustic wave scattering by truncated ground with trenches. *Journal of the Acoustical Society of America*, 123(5):2513–2521, May 2008. CODEN JASMAN. ISSN 1520-8524.

Tranouez:2009:BUF

[TD09] Pierrick Tranouez and Antoine Dutot. Building upon fast multipole methods to detect and model organizations. *Dynamics of Continuous, Discrete & Impulsive Systems. Series B. Applications & Algorithms*, 16 (4):489–500, 2009. CODEN DCDIS4. ISSN 1492-8760.

Tromeur-Dervout:2011:PCF

[TDBEE11] Damien Tromeur-Dervout, Gunther Brenner, David R. Emerson, and Jocelyne Erhel, editors. *Parallel Computational Fluid Dynamics 2008: Parallel Numerical Methods, Software Development and Applications*, volume 74 of *Lecture Notes in Computational Science and Engineering*. Springer-Verlag, Berlin, Germany / Heidelberg, Germany / London, UK / etc., 2011. CODEN LNCSA6. ISBN 3-642-14437-3 (print), 3-642-14438-1 (e-book). ISSN 1439-7358. LCCN ???? URL `http://link.springer.com/book/10.1007/978-3-642-14438-7`; `http://www.springerlink.com/content/978-3-642-14438-7`. Proceedings of the twentieth meeting, Parallel CFD 2008, held May 19–22, 2008 in Lyon, France.

Teng:1998:PGP

[Ten98] Shang-Hua Teng. Provably good partitioning and load balancing algorithms for parallel adaptive N-body simulation. *SIAM Journal on Scientific Computing*, 19(2):635–656, March 1998.

CODEN SJOCE3. ISSN 1064-8275 (print), 1095-7197 (electronic). URL http://epubs.siam.org/sam-bin/dbq/article/28894.

Tornberg:2008:FMM

[TG08] Anna-Karin Tornberg and Leslie Greengard. A fast multipole method for the three-dimensional Stokes equations. *Journal of Computational Physics*, 227(3):1613–1619, 2008. CODEN JCTPAH. ISSN 0021-9991 (print), 1090-2716 (electronic).

Totoo:2014:PHI

[TL14] Prabhat Totoo and Hans-Wolfgang Loidl. Parallel Haskell implementations of the N-body problem. *Concurrency and Computation: Practice and Experience*, 26 (4):987–1019, March 25, 2014. CODEN CCPEBO. ISSN 1532-0626 (print), 1532-0634 (electronic).

Taiji:1994:GTM

[TMES94] M. Taiji, J. Makino, T. Ebisuzaki, and D. Sugimoto. GRAPE-4: a teraFLOPS massively parallel special-purpose computer system for astrophysical N-body simulations. In IEEE, editor, *Proceedings of the Eighth International Parallel Processing Symposium, 1994*, pages 280–287. IEEE Computer Society Press, 1109 Spring Street, Suite 300, Silver Spring, MD 20910, USA, 1994.

Tang:2012:FLC

[TPKP12] Ping Tak Peter Tang, Jongsoo Park, Daehyun Kim, and Vladimir Petrov. A framework for low-communication 1-D FFT. In Hollingsworth [Hol12], pages 42:1–42:12. ISBN 1-4673-0804-8. URL http://conferences.computer.org/sc/2012/papers/1000a043.pdf.

Takahashi:2016:EBM

[TSIM16] Toru Takahashi, Yuta Shimba, Hiroshi Isakari, and Toshiro Matsumoto. An efficient blocking M2L translation for low-frequency fast multipole method in three dimensions. *Computer Physics Communications*, 202(??):151–164, May 2016. CODEN CPHCBZ. ISSN 0010-4655 (print), 1879-2944 (electronic). URL http://www.sciencedirect.com/science/article/pii/S0010465516000278.

Tausch:2003:MBS

[TW03] Johannes Tausch and Jacob White. Multiscale bases for the sparse representation of boundary integral operators on complex geometry. *SIAM Journal on Scientific Computing*, 24(5):1610–1629, 2003. CODEN SJOCE3. ISSN 1064-8275 (print), 1095-7197 (electronic).

Tang:2006:HOP

[TWYC06] Chen Tang, Wenping Wang, Haiqing Yan, and Zhanqing Chen. High-order predictor-corrector of exponential fitting for the N-body problems. *Journal of Computational Physics*, 214(2):505–520, May 20, 2006. CODEN JCTPAH. ISSN 0021-9991 (print), 1090-2716 (electronic). URL http://www.sciencedirect.com/science/article/pii/S0021999105004560.

Tian:2019:FCS

[TXL19] Yan Tian, Shuhuang Xiang, and Guidong Liu. Fast computation of the spectral differentiation by the fast multipole method. *Computers and Mathematics with Applications*, 78(1):240–253, July 1, 2019. CODEN CMAPDK. ISSN 0898-1221 (print), 1873-7668 (electronic). URL http://www.sciencedirect.com/science/article/pii/S0898122119300987.

Tanikawa:2012:PGN

[TYNO12] A. Tanikawa, K. Yoshikawa, K. Nitadori, and T. Okamoto. Phantom-GRAPE: numerical software library to accelerate collisionless N-body simulation with SIMD instruction set on x86 architecture. *arxiv.org*, pages 1–19, March 2012. URL http://arxiv.org/abs/1203.4037; http://www.sciencedirect.com/science/journal/13841076.

Tanikawa:2012:BSS

[TYON12] A. Tanikawa, K. Yoshikawa, T. Okamoto, and K. Nitadori. N-body simulation for self-gravitating collisional systems with a new SIMD instruction set extension to the x86 architecture, Advanced Vector eXtensions. *New Astronomy*, 17(??):82–92, February 2012. CODEN NEASFS. ISSN 1384-1076 (print), 1384-1092 (electronic). URL http://arxiv.org/abs/1104.2700.

Vosbeek:2000:ACD

[VCM00] P. W. C. Vosbeek, H. J. H. Clercx, and R. M. M. Mattheij. Acceleration of contour dynamics simulations with a hierarchical-element method. *Journal of Computational Physics*, 161(1):287–311, 2000. CODEN JCTPAH. ISSN 0021-9991 (print), 1090-2716 (electronic).

Veerapaneni:2009:BIM

[VGZB09] Shravan K. Veerapaneni, Denis Gueyffier, Denis Zorin, and George Biros. A boundary integral method for simulating the dynamics of inextensible vesicles suspended in a viscous fluid in 2D. *Journal of Computational Physics*, 228(7):2334–2353, April 20, 2009. CODEN JCTPAH. ISSN 0021-9991 (print), 1090-2716 (electronic). URL http://www.sciencedirect.com/science/article/pii/S0021999108006244.

VandeWiele:2008:AFM

[VOD08] B. Van de Wiele, F. Olyslager, and L. Dupré. Application of the fast multipole method for the evaluation of magnetostatic fields in micromagnetic computations. *Journal of Computational Physics*, 227 (23):9913–9932, 2008. CODEN JCTPAH. ISSN 0021-9991 (print), 1090-2716 (electronic).

Victory:1991:CAF

[VTG91] H. D. Victory, Jr., Garry Tucker, and Keshab Ganguly. The convergence analysis of fully discretized particle methods for solving Vlasov–Poisson systems. *SIAM Journal on Numerical Analysis*, 28(4):955–989, August 1991. CODEN SJNAAM. ISSN 0036-1429 (print), 1095-7170 (electronic).

Van:2002:TDF

[VW02] Tri Van and Aihua Wood. A time-domain finite element method for Helmholtz equations. *Journal of Computational Physics*, 183(2):486–507, 2002. CODEN JCTPAH. ISSN 0021-9991 (print), 1090-2716 (electronic).

Wambsganss:1999:GLN

[Wam99] Joachim Wambsganss. Gravitational lensing: numerical simulations with a hierarchical tree code. *Journal of Computational and Applied Mathematics*, 109(1–2): 353–372, September 30, 1999. CODEN JCAMDI. ISSN 0377-0427 (print), 1879-1778 (electronic). URL `http://www.sciencedirect.com/science/article/pii/S0377042799001648`.

Wagner:1994:RPA

[WC94a] R. L. Wagner and W. C. Chew. A ray propagation approach for accelerating the fast multipole method. In IEEE [IEE94a], pages 427–430. ISBN 0-7803-2010-7, 0-7803-2009-3, 0-7803-2011-5. ISSN 1064-3125. LCCN TK7871.6 .A55823 1994. Three volumes.

Wagner:1994:RPF

[WC94b] R. L. Wagner and W. C. Chew. A ray-propagation fast multipole algorithm. *Microwave and Optical Technology Letters*, 7(10):435–438, July 1994. CODEN MOTLEO. ISSN 0895-2477 (print), 1098-2760 (electronic).

Wang:2021:PPB

[WCLD21] Ruoxi Wang, Chao Chen, Jonghyun Lee, and Eric Darve. PBBFMM3D: a parallel black-box algorithm for kernel matrix–vector multiplication. *Journal of Parallel and Distributed Computing*, 154(??):64–73, August 2021. CODEN JPDCER. ISSN 0743-7315 (print), 1096-0848 (electronic). URL `http://www.sciencedirect.com/science/article/pii/S0743731521000824`.

Wang:2020:TEB

[WCZ+20] Bo Wang, Duan Chen, Bo Zhang, Wenzhong Zhang, Min Hyung Cho, and Wei Cai. Taylor expansion based fast multipole method for 3-D Helmholtz equations in layered media. *Journal of Computational Physics*, 401(??):Article 109008, January 15, 2020. CODEN JCTPAH. ISSN 0021-9991 (print), 1090-2716 (electronic). URL `https://www.sciencedirect.com/science/article/pii/S0021999119307144`.

Welch:1991:TPW

[Wel91] Peter (Peter H.) Welch, editor. *Transputing '91: proceedings of the World Transputer User Group (WOTUG) Conference, 22–26 April 1991, Sunnyvale, CA*. IOS Press, Postal Drawer 10558, Burke, VA 2209-0558, USA, 1991. ISBN 90-5199-045-6. LCCN ????

Wang:2008:FSM

[WFC08] Wu Wang, Yang De Feng, and Xue Bin Chi. A fast solution method for an electric field integral equation. *Journal on Numerical Methods and Computer Applications*, 29(1):15–24, 2008. ISSN 1000-3266.

Warren:1998:AAL

[WGL+98] M. S. Warren, T. C. Germann, P. S. Lomdahl, D. M. Beazley, and J. K. Salmon. Avalon: an Alpha/Linux cluster achieves 10 Gflops for $15K. In *Proceedings of the 1998 ACM/IEEE conference on Supercomputing*, pages 1–11. ACM Press, New York, NY 10036, USA, 1998. URL `http://dl.acm.org/citation.cfm?id=509058.509130`.

White:1994:DEI

[WHG94] C. A. White and M. Head-Gordon. Derivation and efficient implementation of the fast multipole method. *Journal of Chemical Physics*, 101 (8):6593–6605, ???? 1994. CODEN JCPSA6. ISSN 0021-9606 (print), 1089-7690 (electronic).

White:1996:FTF

[WHG96a] C. A. White and M. Head-Gordon. Fractional tiers in fast multipole method calculations. *Chemical Physics Letters*, 257(5):647–??, ???? 1996. CODEN CHPLBC. ISSN 0009-2614 (print), 1873-4448 (electronic).

White:1996:RAQ

[WHG96b] Christopher A. White and Martin Head-Gordon. Rotating around the quartic angular momentum barrier in fast multipole method calculations. *Journal of Chemical Physics*, 105(12):5061–??, ???? 1996. CODEN JCPSA6. ISSN 0021-9606 (print), 1089-7690 (electronic).

Wilson:2000:PWW

[Wil00] Robin Wilson. The professor who would not leave. *The Chronicle of Higher Education*, ??(??):??, November 24, 2000. ISSN 0009-5982 (print), 1931-1362 (electronic). URL `http://chronicle.com/article/The-Professor-Who-Would-Not/1870/`.

Windemuth:1995:AAM

[Win95] A. Windemuth. Advanced algorithms for molecular dynamics simulation: The program PMD. In Mattson [Mat95], pages 151–169. ISBN 0-8412-3166-4. LCCN QD39.3.E46 P32 1995. Proceedings of 207th National Meeting of the American Chemical Society, San Diego, CA, March 13–17, 1994.

White:1996:CGF

[WJGHG96a] C. A. White, B. G. Johnson, P. M. W. Gill, and M. Head-Gordon. Comment on "A generalized fast multipole approach for Hartree–Fock and density functional computations". *Chemical Physics Letters*, 248(5):482–??, ???? 1996. CODEN CHPLBC. ISSN 0009-2614 (print), 1873-4448 (electronic).

White:1996:LSD

[WJGHG96b] C. A. White, B. G. Johnson, P. M. W. Gill, and M. Head-Gordon. Linear scaling density functional calculations via the continuous fast multipole method. *Chemical Physics Letters*, 253(3):268–??, ???? 1996. CODEN CHPLBC. ISSN 0009-2614 (print), 1873-4448 (electronic).

Wallen:2006:BMF

[WJYO06] Henrik Wallén, Seppo Järvenpää, and Pasi Ylä-Oijala. Broadband multilevel fast multipole algorithm for acoustic scattering problems. *Journal of Computational Acoustics*, 14 (4):507–526, 2006. ISSN 0218-396X.

Wala:2018:FAE

[WK18] Matt Wala and Andreas Klöckner. A fast algorithm with error bounds for Quadrature by Expansion. *Journal of Computational Physics*, 374(??):135–162, December 1, 2018. CODEN JCTPAH. ISSN 0021-9991 (print), 1090-2716 (electronic). URL `http://www.sciencedirect.com/science/article/pii/S0021999118302985`.

Wang:1996:EFM

[WL96] H. Y. Wang and R. LeSar. An efficient fast multipole algorithm based on an expansion in the solid harmonics. *Journal of Chemical Physics*, 104 (11):4173–4179, ???? 1996. CODEN JCPSA6. ISSN 0021-9606 (print), 1089-7690 (electronic).

Wang:2022:IGI

[WLB22] Tingyu Wang, Simon K. Layton, and Lorena A. Barba.

Inexact GMRES iterations and relaxation strategies with fast-multipole boundary element method. *Advances in Computational Mathematics*, 48(3):??, June 2022. CODEN ACMHEX. ISSN 1019-7168 (print), 1572-9044 (electronic). URL `https://link.springer.com/article/10.1007/s10444-022-09932-8`.

Wang:2007:PFM

[WLL+07] Haitao Wang, Ting Lei, Jin Li, Jingfang Huang, and Zhenhan Yao. A parallel fast multipole accelerated integral equation scheme for 3D Stokes equations. *International Journal for Numerical Methods in Engineering*, 70(7):812–839, 2007. CODEN IJNMBH. ISSN 0029-5981 (print), 1097-0207 (electronic).

Wang:1999:LSM

[WLMP99] Zhiqiang Wang, James Lupo, Alan McKenney, and Ruth Pachter. Large scale molecular dynamics simulations with fast multipole implementations. In ACM [ACM99], page ??

Watschinger:2022:PFM

[WMOZ22] Raphael Watschinger, Michal Merta, Günther Of, and Jan Zapletal. A parallel fast multipole method for a space-time boundary element method for the heat equation. *SIAM Journal on Scientific Computing*, 44(4):C320–C345, ???? 2022. CODEN SJOCE3. ISSN 1064-8275 (print), 1095-7197 (electronic). URL `https://epubs.siam.org/doi//doi/10.1137/21M1430157`.

Watanabe:2014:GAH

[WN14] Tsuyoshi Watanabe and Naohito Nakasato. GPU accelerated hybrid tree algorithm for collision less N-body simulations. *ACM SIGARCH Computer Architecture News*, 42(4):15–20, 2014. CODEN CANED2. ISSN 0163-5964 (print), 1943-5851 (electronic).

Waltz:2002:PCT

[WPM+02] J. Waltz, G. L. Page, S. D. Milder, J. Wallin, and A. Antunes. A performance comparison of tree data structures for N-body simulation. *Journal of Computational Physics*, 178(1):1–14, May 1, 2002. CODEN JCTPAH. ISSN 0021-9991 (print), 1090-2716 (electronic). URL `http://www.sciencedirect.com/science/article/pii/S0021999101969438`.

Windemuth:1991:MDC

[WS91] A. Windemuth and K. Schulten. Molecular dynamics on the Connection Machine. *Molecular simulation*, 5(??):353–361, ???? 1991. CODEN MOSIEA. ISSN 0892-7022 (print), 1029-0435 (electronic).

Warren:1992:ANS

[WS92] Michael S. Warren and John K. Salmon. Astrophysical N-body simulations using hierarchical tree data structures. In IEEE Computer Society.Technical Committee on Computer Architecture [IEE92b], pages 570–576. ISBN 0-8186-2632-1 (case), 0-8186-2630-5 (paper), 0-8186-2631-3 (microfiche), 0-89791-537-2 (ACM Library series). LCCN QA76.5 .S894 1992. URL ftp://ftp.cacr.caltech.edu/nbody/sc92.ps.Z. 1992 Gordon Bell Prize winner.

Warren:1993:PHO

[WS93] Michael S. Warren and John K. Salmon. A parallel hashed oct-tree N-body algorithm. In IEEE [IEE93], pages 12–21. ISBN 0-8186-4340-4 (paperback), 0-8186-4341-2 (microfiche), 0-8186-4342-0 (hardback), 0-8186-4346-3 (CD-ROM). ISSN 1063-9535. LCCN QA76.5 .S96 1993. URL ftp://ftp.cacr.caltech.edu/nbody/sc93.ps.Z.

Warren:1995:PPV

[WS95a] Michael S. Warren and John K. Salmon. A parallel, portable and versatile treecode. In Bailey et al. [B+95], pages 319–324. ISBN 0-89871-344-7. LCCN QA76.58.S55 1995. URL http://qso.lanl.gov/papers/siam95/pp.ps.

Warren:1995:PPP

[WS95b] Michael S. Warren and John K. Salmon. A portable parallel particle program. *Computer Physics Communications*, 87(1–2):266–290, May 2, 1995. CODEN CPHCBZ. ISSN 0010-4655 (print), 1879-2944 (electronic). URL http://qso.lanl.gov/papers/cpc/v9.ps.

Warren:1997:PPI

[WSB+97] M. S. Warren, J. K. Salmon, D. J. Becker, M. P. Goda, T. Sterling, and G. S. Winckelmans. Pentium Pro inside: I. A treecode at 430 gigaflops on ASCI Red, II. Price/performance of \$50/Mflop on Loki and Hyglac. In ACM [ACM97], pages 61–?? ISBN 0-89791-985-8. LCCN ???? URL http://www.supercomp.org/sc97/proceedings/. ACM SIGARCH order number 415972. IEEE Computer Society Press order number RS00160.

Winkel:2012:MPM

[WSH+12] Mathias Winkel, Robert Speck, Helge Hübner, Lukas Arnold, Rolf Krause, and Paul Gibbon. A massively parallel, multi-disciplinary Barnes–Hut tree code for extreme-scale N-body simulations. *Computer Physics Communications*, 183(4):880–889, April

2012. CODEN CPHCBZ. ISSN 0010-4655 (print), 1879-2944 (electronic). URL http://www.sciencedirect.com/science/article/pii/S0010465511004012.

Winckelmans:1995:AFP

[WSW+95] G. S. Winckelmans, J. K. Salmon, M. S. Warren, A. Leonard, and B. Jodoin. Application of fast parallel and sequential tree codes to computing three-dimensional flows with vortex element and boundary element methods. In Beale et al. [BCH93], page ?? ISBN 0-7923-2250-9. LCCN QA925 .V66 1993. Proceedings of the NATO Advanced Research Workshop on Vortex Flows and Related Numerical Methods, Grenoble, France, June 15-19, 1992.

Winckelmans:1995:FST

[WSWL95] Grégoire S. Winckelmans, John K. Salmon, Michael S. Warren, and Anthony Leonard. The fast solution of three-dimensional fluid dynamical N-body problems using parallel tree codes: vortex element method and boundary element method. In Bailey et al. [B+95], pages xviii + 875. ISBN 0-89871-344-7. LCCN QA76.58.S55 1995.

Wilson:2021:GAF

[WVK21] Leighton Wilson, Nathan Vaughn, and Robert Krasny. A GPU-accelerated fast multipole method based on barycentric Lagrange interpolation and dual tree traversal. *Computer Physics Communications*, 265(??):Article 108017, August 2021. CODEN CPHCBZ. ISSN 0010-4655 (print), 1879-2944 (electronic). URL http://www.sciencedirect.com/science/article/pii/S0010465521001296.

Warren:2002:HDC

[WWF02] Michael S. Warren, Eric H. Weigle, and Wu-Chun Feng. High-density computing: A 240-processor Beowulf in one cubic meter. In IEEE [IEE02], page ?? ISBN 0-7695-1524-X. LCCN ???? URL http://www.sc-2002.org/paperpdfs/pap.pap210.pdf.

Wang:2008:FME

[WXQL08] Wei Wei Wang, Yong Chun Xu, Fen Tao Qin, and Jiao Li. Fast multipole expansion of a 2D potential problem. *Math. Pract. Theory*, 38(24): 225–228, 2008. ISSN 1000-0984.

Wang:2005:NFM

[WY05] Haitao Wang and Zhenhan Yao. A new fast multipole boundary element method for large scale analysis of mechanical properties in 3D particle-reinforced composites. *CMES Comput. Model. Eng. Sci.*, 7 (1):85–95, 2005. ISSN 1526-1492.

Wang:2007:LSA

[WY07a] Haitao Wang and Zhenhan Yao. Large scale analysis of mechanical properties in 3-D fiber-reinforced composites using a new fast multipole boundary element method. *Tsinghua Sci. Technol.*, 12 (5):554–561, 2007. CODEN TSTEF7. ISSN 1007-0214.

Wang:2007:FMB

[WY07b] P. B. Wang and Z. H. Yao. Fast multipole boundary element analysis of two-dimensional elastoplastic problems. *Communications in Numerical Methods in Engineering*, 23(10):889–903, 2007. CODEN CANMER. ISSN 1069-8299 (print), 1099-0887 (electronic).

Wang:2005:FMB

[WYW05] Pengbo Wang, Zhenhan Yao, and Haitao Wang. Fast multipole BEM for simulation of 2-D solids containing large numbers of cracks. *Tsinghua Sci. Technol.*, 10(1):76–81, 2005. CODEN TSTEF7. ISSN 1007-0214.

Wang:2017:BEM

[WZC+17] Qiao Wang, Wei Zhou, Yonggang Cheng, Gang Ma, Xiaolin Chang, and Qiang Huang. The boundary element method with a fast multipole accelerated integration technique for 3D elastostatic problems with arbitrary body forces. *Journal of Scientific Computing*, 71(3): 1238–1264, June 2017. CODEN JSCOEB. ISSN 0885-7474 (print), 1573-7691 (electronic). URL `https://link.springer.com/content/pdf/10.1007/s10915-016-0335-1.pdf`.

Wang:2019:FMM

[WZC19] Bo Wang, Wenzhong Zhang, and Wei Cai. Fast multipole method for 3-D Helmholtz equation in layered media. *SIAM Journal on Scientific Computing*, 41(6):A3954–A3981, ???? 2019. CODEN SJOCE3. ISSN 1064-8275 (print), 1095-7197 (electronic).

Wang:2021:FMMa

[WZC21a] Bo Wang, Wenzhong Zhang, and Wei Cai. Fast multipole method for 3-D Laplace equation in layered media. *Computer Physics Communications*, 259(??):Article 107645, February 2021. CODEN CPHCBZ. ISSN 0010-4655 (print), 1879-2944 (electronic). URL `http://www.sciencedirect.com/science/article/pii/S0010465520303131`.

Wang:2021:FMMb

[WZC21b] Bo Wang, Wenzhong Zhang, and Wei Cai. Fast multipole method for 3-D Poisson–Boltzmann equation in layered electrolyte-dielectric media. *Journal of Computational Physics*, 439(??):Article

110379, August 15, 2021. CODEN JCTPAH. ISSN 0021-9991 (print), 1090-2716 (electronic). URL http://www.sciencedirect.com/science/article/pii/S0021999121002746.

Xu:2008:FMV

[XJM08] Qiang Xu, Yantao Jiang, and Dong Mi. Fast multipole virtual boundary element method for solving two-dimensional problems. *J. Harbin Eng. Univ.*, 29(6):550–556, 2008.

Xiao:2009:PCW

[XTH09] Jinyou Xiao, Johannes Tausch, and Yucai Hu. A-posteriori compression of wavelet-BEM matrices. *Computational mechanics*, 44(5):705–715, 2009. CODEN CMMEEE. ISSN 0178-7675 (print), 1432-0924 (electronic).

Xu:1995:NPB

[Xu95] G. Xu. A new parallel N-body gravity solver: TPM. *Astrophysical Journal. Supplement Series*, 98(??):335–??, May 1995. CODEN APJSA2. ISSN 0067-0049 (print), 1538-4365 (electronic).

Xue:1998:THT

[Xue98] Guoliang Xue. An O(n) time hierarchical tree algorithm for computing force field in n-body simulations. *Theoretical Computer Science*, 197 (1–2):157–169, May 15, 1998. CODEN TCSCDI. ISSN 0304-3975 (print), 1879-2294 (electronic). URL http://www.elsevier.com/cas/tree/store/tcs/sub/1998/197/1-2/2768.pdf.

Xiao:2009:FMV

[XWT09] Jinyou Xiao, Lihua Wen, and Johannes Tausch. On fast matrix-vector multiplication in wavelet Galerkin BEM. *Engineering Analysis with Boundary Elements*, 33 (2):159–167, 2009. ISSN 0955-7997 (print), 1873-197x (electronic).

Xu:2008:FMB

[XWY+08] Jundong Xu, Pengbo Wang, Zhenhan Yao, Yintao Wei, and Weiqi Yin. Fast multipole BEM for analyses of large-scale fracture problems. *J. Tsinghua Univ., Sci. Technol.*, 48(5):896–899, 2008.

Yoshii:2018:PTE

[YAO18] Noriyuki Yoshii, Yoshimichi Andoh, and Susumu Okazaki. Pressure tensor for electrostatic interaction calculated by fast multipole method with periodic boundary condition. *Journal of Computational Chemistry*, 39(19): 1192–1199, July 15, 2018. CODEN JCCHDD. ISSN 0192-8651 (print), 1096-987X (electronic).

Yoshii:2020:FMM

[YAO20] Noriyuki Yoshii, Yoshimichi Andoh, and Susumu Okazaki.

Fast multipole method for three-dimensional systems with periodic boundary condition in two directions. *Journal of Computational Chemistry*, 41(9):940–948, April 5, 2020. CODEN JCCHDD. ISSN 0192-8651 (print), 1096-987X (electronic).

Yeung:1997:TNL

[YB97] M. S. Yeung and E. Barouch. Three-dimensional nonplanar lithography simulation using a periodic fast multipole method [3051-66]. In Fuller [Ful97], pages 509–521. ISBN 0-8194-2465-X. ISSN 0277-786X (print), 1996-756X (electronic). LCCN TS510.S63 v.3051.

Yuan:2001:PIF

[YB01] Yanhong Yuan and Prith Banerjee. A parallel implementation of a fast multipole-based 3-D capacitance extraction program on distributed memory multicomputers. *Journal of Parallel and Distributed Computing*, 61(12):1751–1774, December 1, 2001. CODEN JPDCER. ISSN 0743-7315 (print), 1096-0848 (electronic). URL `http://www.idealibrary.com/links/doi/10.1006/jpdc.2001.1725`; `http://www.idealibrary.com/links/doi/10.1006/jpdc.2001.1725/pdf`; `http://www.idealibrary.com/links/doi/10.1006/jpdc.2001.1725/ref`.

Yokota:2012:TSF

[YB12] Rio Yokota and Lorena A. Barba. A tuned and scalable fast multipole method as a preeminent algorithm for exascale systems. *The International Journal of High Performance Computing Applications*, 26(4):337–346, November 2012. CODEN IHPCFL. ISSN 1094-3420 (print), 1741-2846 (electronic). URL `http://hpc.sagepub.com/content/26/4/337.full.pdf+html`.

Yan:2021:KAF

[YB21] Wen Yan and Robert Blackwell. Kernel aggregated fast multipole method. *Advances in Computational Mathematics*, 47(5):??, October 2021. CODEN ACMHEX. ISSN 1019-7168 (print), 1572-9044 (electronic). URL `https://link.springer.com/article/10.1007/s10444-021-09896-1`.

Yokota:2011:BEU

[YBK+11] Rio Yokota, Jaydeep P. Bardhan, Matthew G. Knepley, L. A. Barba, and Tsuyoshi Hamada. Biomolecular electrostatics using a fast multipole BEM on up to 512 GPUs and a billion unknowns. *Computer Physics Communications*, 182(6):1272–1283, June 2011. CODEN CPHCBZ. ISSN 0010-4655 (print), 1879-2944 (electronic). URL `http:`

//www.sciencedirect.com/science/article/pii/S0010465511000750.

Yokota:2012:SFM

[YBNY12] Rio Yokota, Lorena Barba, Tetsu Narumi, and Kenji Yasuoka. Scaling fast multipole methods up to 4000 GPUs. In ????, editor, *ATIP '12: Proceedings of the ATIP/A*CRC Workshop on Accelerator Technologies for High-Performance Computing: Does Asia Lead the Way?*, pages 204–209. ACM Press, New York, NY 10036, USA, 2012. ISBN 1-4503-1644-1. LCCN ????

Yokota:2013:PTS

[YBNY13] Rio Yokota, L. A. Barba, Tetsu Narumi, and Kenji Yasuoka. Petascale turbulence simulation using a highly parallel fast multipole method on GPUs. *Computer Physics Communications*, 184(3):445–455, March 2013. CODEN CPHCBZ. ISSN 0010-4655 (print), 1879-2944 (electronic). URL http://www.sciencedirect.com/science/article/pii/S0010465512002974.

Ying:2004:KIA

[YBZ04] Lexing Ying, George Biros, and Denis Zorin. A kernel-independent adaptive fast multipole algorithm in two and three dimensions. *Journal of Computational Physics*, 196(2):591–626, 2004. CODEN JCTPAH. ISSN 0021-9991 (print), 1090-2716 (electronic).

Ying:2003:NPK

[YBZL03] Lexing Ying, George Biros, Denis Zorin, and Harper Langston. A new parallel kernel-independent fast multipole method. In ACM [ACM03], page ?? ISBN 1-58113-695-1. LCCN ???? URL http://www.sc-conference.org/sc2003/inter_cal/inter_cal_detail.php?eventid=10707#2; http://www.sc-conference.org/sc2003/paperpdfs/pap166.pdf.

Yesypenko:2025:SFM

[YCM25] Anna Yesypenko, Chao Chen, and Per-Gunnar Martinsson. A simplified fast multipole method based on strong recursive skeletonization. *Journal of Computational Physics*, 524(??):??, March 1, 2025. CODEN JCTPAH. ISSN 0021-9991 (print), 1090-2716 (electronic). URL http://www.sciencedirect.com/science/article/pii/S0021999124009550.

Yang:1998:STE

[YF98] Tao Yang and Cong Fu. Space/time-efficient scheduling and execution of parallel irregular computations. *ACM Transactions on Programming Languages and Systems*, 20(6):1195–1222, November 1998. CODEN ATPSDT. ISSN 0164-

0925 (print), 1558-4593 (electronic). URL http://www.acm.org:80/pubs/citations/journals/toplas/1998-20-6/p1195-yang/.

Yoshikawa:2005:PTM

[YF05] K. Yoshikawa and T. Fukushige. PPPM and TreePM methods on GRAPE systems for cosmological N-body simulations. *Publications of the Astronomical Society of Japan*, 57(??):849–860, December 2005. CODEN PASJAC. ISSN 0004-6264.

Yang:2001:CPD

[YGSR01] Dow-Yung Yang, Ananth Grama, Vivek Sarin, and Naren Ramakrishnan. Compression of particle data from hierarchical approximate methods. *ACM Transactions on Mathematical Software*, 27 (3):317–339, September 2001. CODEN ACMSCU. ISSN 0098-3500 (print), 1557-7295 (electronic).

Ying:2006:KIF

[Yin06] Lexing Ying. A kernel independent fast multipole algorithm for radial basis functions. *Journal of Computational Physics*, 213(2): 451–457, April 10, 2006. CODEN JCTPAH. ISSN 0021-9991 (print), 1090-2716 (electronic). URL http://www.sciencedirect.com/science/article/pii/S0021999105004298.

Ying:2009:FAB

[Yin09] Lexing Ying. Fast algorithms for boundary integral equations. In *Multiscale modeling and simulation in science*, volume 66 of *Lect. Notes Comput. Sci. Eng.*, pages 139–193. Springer, Berlin, 2009.

Ying:2015:BPF

[Yin15] Lexing Ying. The N-body problem and the fast multipole method. In Higham et al. [HDG+15], pages 775–778. ISBN 0-691-15039-7 (hardcover). LCCN QA155 .P75 2015. URL http://press.princeton.edu/titles/10592.html.

Yokota:2009:FMM

[YNS+09] R. Yokota, T. Narumi, R. Sakamaki, S. Kameoka, S. Obi, and K. Yasuoka. Fast multipole methods on a cluster of GPUs for the meshless simulation of turbulence. *Computer Physics Communications*, 180(11): 2066–2078, November 2009. CODEN CPHCBZ. ISSN 0010-4655 (print), 1879-2944 (electronic). URL http://www.sciencedirect.com/science/article/pii/S0010465509001891.

Yarvin:1998:GOD

[YR98] Norman Yarvin and Vladimir Rokhlin. A generalized one-dimensional fast multipole method with application to filtering of spherical harmonics. *Journal of Computa-

tional Physics, 147(2):594–609, December 10, 1998. CODEN JCTPAH. ISSN 0021-9991 (print), 1090-2716 (electronic). URL http://www.sciencedirect.com/science/article/pii/S0021999198961046.

Yarvin:1999:IFM

[YR99] Norman Yarvin and Vladimir Rokhlin. An improved fast multipole algorithm for potential fields on the line. *SIAM Journal on Numerical Analysis*, 36(2):629–666, April 1999. CODEN SJNAAM. ISSN 0036-1429 (print), 1095-7170 (electronic). URL http://epubs.siam.org/sam-bin/dbq/article/32923.

Yu:2016:VGM

[YRB16] Chunxiao Yu, Cuihuan Ren, and Xueting Bai. VRP-GMRES(m) iteration algorithm for fast multipole boundary element method. *Mathematical and Computational Applications*, 21(4):49–??, December 2016. CODEN ???? ISSN 2297-8747. URL https://www.mdpi.com/2297-8747/21/4/49.

Yang:2013:CRP

[YRGS13] Minglin Yang, Kuan Fang Ren, Mingjiang Gou, and Xinqing Sheng. Computation of radiation pressure force on arbitrary shaped homogeneous particles by multilevel fast multipole algorithm. *Optics Letters*, 38(11):1784–1786, June 1, 2013. CODEN OPLEDP. ISSN 1539-4794.

Yan:2018:FIP

[YS18] Wen Yan and Michael Shelley. Flexibly imposing periodicity in kernel independent FMM: a multipole-to-local operator approach. *Journal of Computational Physics*, 355(??):214–232, February 15, 2018. CODEN JCTPAH. ISSN 0021-9991 (print), 1090-2716 (electronic). URL http://www.sciencedirect.com/science/article/pii/S0021999117308501.

Yu:2005:EUS

[YSM05] Chun Xiao Yu, Guang Xian Shen, and Yun Feng Mu. Existence and uniqueness of the solution for fast multipole boundary element method. *Math. Theory Appl. (Changsha)*, 25(1):21–25, 2005. ISSN 1006-8074.

Yokota:2014:CCF

[YTK14] Rio Yokota, George Turkiyyah, and David Keyes. Communication complexity of the Fast Multipole Method and its algebraic variants. *Supercomputing Frontiers and Innovations*, 1(1):63–84, ???? 2014. CODEN ???? ISSN 2409-6008 (print), 2313-8734 (electronic). URL http://superfri.org/superfri/article/view/22.

Zhou:1995:NMD

[ZB95] Ruhong Zhou and Bruce J. Berne. A new molecular dynamics method combining the reference system propagator algorithm with a fast multipole method for simulating proteins and other complex systems. *Journal of Chemical Physics*, 103(21):9444–9459, ???? 1995. CODEN JCPSA6. ISSN 0021-9606 (print), 1089-7690 (electronic).

Zhang:2014:PFS

[ZB14] Xinxin Zhang and Robert Bridson. A PPPM fast summation method for fluids and beyond. *ACM Transactions on Graphics*, 33(6): 206:1–206:??, November 2014. CODEN ATGRDF. ISSN 0730-0301 (print), 1557-7368 (electronic).

Zhu:2015:SRB

[ZBG15] Yufeng Zhu, Robert Bridson, and Chen Greif. Simulating rigid body fracture with surface meshes. *ACM Transactions on Graphics*, 34(4): 150:1–150:??, August 2015. CODEN ATGRDF. ISSN 0730-0301 (print), 1557-7368 (electronic).

Zhang:2011:OBH

[ZBS11] Junchao Zhang, Babak Behzad, and Marc Snir. Optimizing the Barnes–Hut algorithm in UPC. In Lathrop et al. [LCK11], pages 75:1–75:11. ISBN 1-4503-0771-X. LCCN ????

Zhang:2015:DMB

[ZBS15] Junchao Zhang, Babak Behzad, and Marc Snir. Design of a multithreaded Barnes–Hut algorithm for multicore clusters. *IEEE Transactions on Parallel and Distributed Systems*, 26(7):1861–1873, July 2015. CODEN ITDSEO. ISSN 1045-9219 (print), 1558-2183 (electronic). URL `http://www.computer.org/csdl/trans/td/2015/07/06837521-abs.html`.

Zhao:2000:IES

[ZC00] Jun-Sheng Zhao and Weng Cho Chew. Integral equation solution of Maxwell's equations from zero frequency to microwave frequencies. *IEEE Transactions on Antennas and Propagation*, 48 (10):1635–1645, 2000. CODEN IETPAK. ISSN 0018-926x (print), 1558-2221 (electronic).

Zhang:2000:SDC

[ZCG00] Yao Jiang Zhang, Hong Yu Chen, and Zhong Lin Gong. Scattering by dielectric coated cylinders using fast multipole algorithm. *Beijing Daxue Xuebao Ziran Kexue Ban*, 36 (1):102–108, 2000. CODEN PCTHAP. ISSN 0479-8023.

Zhao:1998:TSM

[ZCL+98] J. S. Zhao, W. C. Chew, C. C. Lu, E. Michielssen, and J. M. Song. Thin-stratified medium fast-multipole algorithm for solving microstrip structures. *IEEE transactions on microwave theory and techniques*, 46(4):395–403, April 1998. CODEN IETMAB. ISSN 0018-9480 (print), 1557-9670 (electronic).

Zinchenko:2005:MAA

[ZD05] Alexander Z. Zinchenko and Robert H. Davis. A multipole-accelerated algorithm for close interaction of slightly deformable drops. *Journal of Computational Physics*, 207 (2):695–735, August 10, 2005. CODEN JCTPAH. ISSN 0021-9991 (print), 1090-2716 (electronic). URL `http://www.sciencedirect.com/science/article/pii/S0021999105000471`.

Zheng:2016:AEA

[ZGD+16] Chang-Jun Zheng, Hai-Feng Gao, Lei Du, Hai-Bo Chen, and Chuanzeng Zhang. An accurate and efficient acoustic eigensolver based on a fast multipole BEM and a contour integral method. *Journal of Computational Physics*, 305(??):677–699, January 15, 2016. CODEN JCTPAH. ISSN 0021-9991 (print), 1090-2716 (electronic). URL `http://www.sciencedirect.com/science/article/pii/S0021999115007251`.

Zwart:2010:SUI

[ZGI+10] Simon Portegies Zwart, Derek Groen, Tomoaki Ishiyama, Keigo Nitadori, Junichiro Makino, Cees de Laat, Steve McMillan, Kei Hiraki, Stefan Harfst, and Paola Grosso. Simulating the universe on an intercontinental Grid. *Computer*, 43(8):63–70, August 2010. CODEN CPTRB4. ISSN 0018-9162 (print), 1558-0814 (electronic).

Zhang:2010:RFY

[ZHPS10] Bo Zhang, Jingfang Huang, Nikos P. Pitsianis, and Xiaobai Sun. Revision of FMM–Yukawa: An adaptive fast multipole method for screened Coulomb interactions. *Computer Physics Communications*, 181(12): 2206–2207, December 2010. CODEN CPHCBZ. ISSN 0010-4655 (print), 1879-2944 (electronic). URL `http://www.sciencedirect.com/science/article/pii/S0010465510003577`.

Zhang:2011:FSB

[ZHPS11] Bo Zhang, Jingfang Huang, Nikos P. Pitsianis, and Xiaobai Sun. A Fourier-series-based kernel-independent fast multipole method. *Journal of Computational Physics*, 230 (15):5807–5821, July 1, 2011. CODEN JCTPAH. ISSN 0021-9991 (print), 1090-2716 (electronic). URL `http://www.sciencedirect.com/science/article/pii/S0021999111002105`.

Zhao:1991:PMM

[ZJ91] Feng Zhao and S. Lennart Johnsson. The parallel multipole method on the Connection Machine. *SIAM Journal on Scientific and Statistical Computing*, 12(6):1420–1437, November 1991. CODEN SIJCD4. ISSN 0196-5204.

Zhao:2007:VFM

[ZKL+07] Zhiqin Zhao, Narayan Kovvali, Wenbin Lin, Chang-Hoi Ahn, Luise Couchman, and Lawrence Carin. Volumetric fast multipole method for modeling Schrödinger's equation. *Journal of Computational Physics*, 224(2):941–955, 2007. CODEN JCTPAH. ISSN 0021-9991 (print), 1090-2716 (electronic).

Zurek:1994:LSS

[ZQSW94] W. H. Zurek, P. J. Quinn, J. K. Salmon, and M. S. Warren. Large scale structure after COBE: Peculiar velocities and correlations of cold dark matter halos. *Astrophysical Journal*, 431(2 (or 1??)):559–??, 1994. CODEN ASJOAB. ISSN 0004-637X (print), 1538-4357 (electronic). URL `ftp://ftp.cacr.caltech.edu/nbody/cdp10.ps.Z`.

Zhang:2007:ASD

[ZT07] J. M. Zhang and Masa. Tanaka. Adaptive spatial decomposition in fast multipole method. *Journal of Computational Physics*, 226(1): 17–28, September 10, 2007. CODEN JCTPAH. ISSN 0021-9991 (print), 1090-2716 (electronic). URL `http://www.sciencedirect.com/science/article/pii/S0021999107001404`.

Zhang:2019:FMM

[ZX19] Qingyang Zhang and Shuhuang Xiang. On fast multipole methods for Volterra integral equations with highly oscillatory kernels. *Journal of Computational and Applied Mathematics*, 348(??): 535–554, March 1, 2019. CODEN JCAMDI. ISSN 0377-0427 (print), 1879-1778 (electronic). URL `http://www.sciencedirect.com/science/article/pii/S0377042718305545`.

Zhao:2005:FMB

[ZY05] Libin Zhao and Zhenhan Yao. Fast multipole BEM for 3-D elastostatic problems with applications for thin structures. *Tsinghua Sci. Technol.*, 10(1):67–75, 2005. CODEN TSTEF7. ISSN 1007-0214.

Zheng:1993:EMM

[ZZ93] Xuehe Zheng and Michael C. Zerner. Electric multipole moment integrals evaluated over Slater-type orbitals. *International Journal of Quantum Chemistry. Quantum Chemistry Symposium*, 27:431–450, 1993. CODEN IJQSDI. ISSN 0161-3642.