# 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, JMC97, 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]. $\mathbf{R^n}$ [CBN02]. $N$ [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]. $\nu$ [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, 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, CK95a, 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, NW89, Pta21, Sar03, TPKP12, WYW05, WZC19, WCZ+20, WZC21a, YB01, ZY05]. **-dimensional** [Lab98]. **-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** [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** [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** [SRPD06, AHLP93, Dac06, EG09a, EG13, HHKP09, HHM19, ZGD+16]. **achieves** [WGL+98]. **Achieving** [SSF96]. **ACM**

[IEE02, Kar95]. **ACM/IEEE** [Kar95, ACM97]. **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, 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]. **algebra** [CB20]. **Algebraic** [Car09, 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, 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, LC93, LC94, LWM+02, MG07, MG09, MCBB07, NW89, NKV94, NT09, OR89, OLLL03, OLL04, PJY95, PRL03, Rah96, RCWY07, Sar03, ST02, SK04, Sud04, TCW08, TC09, WK18, WJYO06, WL96]. **algorithm** [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, ŁBGS16, CC13]. **analyze** [SHM98]. **Analyzing** [CSMCxx, JMC97, HHL+21]. **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** [WVK21]. **Based** [AAB+17, CD13, GSS98a, GSS00, MPPA96, YB01, AO10, BLA05, BN98, BHGR05, FMI+93, GROZ04, GKD09, GP08, HHKP09, HLL08, HHL+21, HLL+18, LM02, LDB96, Liu08, NN12, Sel22, Sud04, Tak14, WL96, WCZ+20, WVK21, 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, MB05, NH97, Pta21, Tau03a, WYW05, XWT09, XTH09, XWY+08, hYtWbWL08, YBK+11, ZY05, ZGD+16]. **BEM-FEM** [MB05]. **Beowulf** [WWF02]. **Best** [Cip00]. **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** [BH03, BR93, Bre04, LJ96b, LJ96a, MBA97, OSW06b, SS07, Sel22, WZC+17, WSW+95, 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, 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, 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, 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, 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, MHI07]. **Corrected** [Dac10]. **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** [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, JMC97, Liu08, 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, ŁBGS16, 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** [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, LHL08, NMH06]. **direction** [HM95]. **Directional** [BPT+14]. **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, 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, 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**

[BR93, LJ96b, LJ96a, MBA97, Sel22, WZC+17, WSW+95, 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, 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** [CD13, GHRW98, GD03, MG11, Nil04, SC95, Sta95a, WZC19, 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** [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, 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]. **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, 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, CPD17, CKB11, Dac06, Dar97, DY98, Dem95, Dem96a, Dem96b, DD95, DR95, DGR96, EB94, EB96, EMRV92, ESM98, EG13, FOCB96, Gas97, Gav11, GSC01, GP93, Gre94, GHRW98, GW98, Gue97, 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, MB16, MB05, MGM95, McK96]. **Fast** [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, WSW+95, XWY+08, XJM08, YR99, Yin09, Yin15, YNS+09, YAO20, 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, CC04, CC05, Car09, CGR88, CWHG97, CDF10, CWK08, CCKL09, CGR99, CHL06, CCG+06b, CRG01, CPP93, CWD08, CRW93, CB20, CFR08, CB09, Dac09, Dac10, DMC20, Dar02]. **fast** [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, HJZ09, HLL+18, IYK16, 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, LC14, Liu08, LY14, LCZ07, LCM07, LCHM10, LCHM13, LWM+02, Mak99, MG07, MG09, MR07, MRH14, MSS20]. **fast** [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, WHG94, WJGHG96a, WHG96a, WJGHG96b, WHG96b, WVK21, WSWL95, XWT09, YRGS13, hYtWbWL08, YR98, YB97, YBZL03, YBZ04, Yin06, YBK+11, YBNY12, YB12, YBNY13, iYNK02, YAO18, YSM05, ZCG00, ZT07, ZHPS10, ZHPS11]. **fast** [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, ZCL+98]. **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, 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]. **Good** [Ten98]. **GOTPM** [DKPH04]. **GPU** [GE13, Ham11, HL15, HEGH14, Kan15, MPZ21, WN14, WVK21]. **GPU-accelerated** [Ham11, WVK21]. **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]. **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]. **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** [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, MR07, RKRRL22, YS18, YBZL03, YBZ04, Yin06, ZHPS11]. **India** [IEE98]. **indirect** [GAD13, Ham11, LHL08]. **Induction** [Pie93]. **industrial** [And08, GLS06, Syl03]. **Inexact** [LOSZ07a, LOSZ07b]. **inextensible** [VGZB09]. **infinite** [KS04, Mil08]. **Inhomogeneous** [SHMC97, SMC97, CL91, SM97, SHM98]. **Innovation** [ACM03]. **Insight** [IEE02]. **Institute** [BR93, HM86]. **instruction** [TYON12, TYNO12]. **Integral** [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, 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, DGR96, KLZ+06, BLA05, GD07a, Sar03, Tak14, WVK21]. **interpolation-based** [Tak14].

**Interprocessor** [BSvdG+94]. **Introduction** [DS00, GW98]. **Inverse** [CDGS03, CDGS05, CPD17, 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** [GD07a]. **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, CC15, LX22, MR07, RKRRL22, WCLD21, YS18, YBZL03, YBZ04, Yin06, ZHPS11]. **kernel-independent** [MR07, YBZL03, YBZ04, ZHPS11]. **Kernels** [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]. **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, 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]. **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, OME+92, SCM+90]. **Many-Body** [HP95, Pie93, PG96a, App85, EIM+92, EFT+93, HFKM98, OME+92, SCM+90]. **many-core** [HYS21, INS+20]. **map** [GGM93]. **MAPLE** [McD97, Pie93]. **Mapping** [BT03, LB92a]. **mappings** [OR89]. **March** [Ano95b, Ano96, Ano97a, Ful97, HTA+97]. **Martin** [ACM99]. **Maryland** [IEE96a]. **Massachusetts** [K+96]. **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** [HXC21, Pan92, CG04, Dac06, XTH09]. **Matrix** [HXC21, PNB94, SP01, 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, BT03, BK15, BPT+14, BVW96, BV96b, BL05, BH88, CL12, CC15, CS98b, CPD17, CKB11, EMRV92, FDvW21, GP93, GKS94, Gue97, 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, Yin15, 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, CL91, CC04, CC05, Car09, CWHG97, CDF10, CCZ97, CWK08, CCKL09, CCG+06b, CRG01, CPP93, CRW93, CB20, CFR08, CB09, Dac06, Dac09, Dac10]. **method** [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, 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, LHL08, LC14, Liu08, Liu09, LCZ07, LCM07, MI95, Mak99, MB05, MR07, Mil08, MRH14, MMNB06, MSS20, NT94, NH97, OSW05, OSW06a,

Of08, OKS09, OCK+03, OYK+14, OMC08, OFH+08, OP07, ON09a, PN95, PSPS94]. **method** [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, WHG94, WHG96a, WJGHG96b, WHG96b, WVK21, WSWL95, XJM08, YR98, 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, 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, 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, Liu08, RS20, WSH+12]. **multi-disciplinary** [WSH+12]. **multi-domain** [Liu08]. **multi-grid** [RS20]. **Multi-level** [AP03]. **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, 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, BT03, BK15, BPT+14, Ber95, BVW96, BV96b, BS00, BL05, BFO99, Boy92b, CDM98, CDGS03, CDGS05, CL12, CD13, CC15, CSMCxx, CKE08, CS98b, CC10, CC12, CJ05, CFR10, CPD17, CKB11, DDL13, DY98, EB96, EMRV92, FDvW21, FL13, GP93, GSS98a, GSS00, GR97, GHRW98, GW98, Gue97, 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, SC94, SC95, SLC96]. **Multipole** [SLC97, Sta95a, SP01, WC94a, WC94b, WLMP99, WZC+17, WZC19, YR99, Yin15, YTK14, 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, 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, FLZB97a, FLZB97b, FPG05, FD09, Fuj98]. **multipole** [GDDC08, Gas97, GBMN06, GF06b, GF06a, Gav11, GSC01, GIS98, GY08, GR02, GG16, GROZ04, GKD09, GE13, GB11, GR88b, GG89, GG90, GH02, GCH+18, GD05, GD06, GD08, GD09, GODZ10, GAD13, Ham11, HHKP09, HS08, Hav03, HYS21, HC10, HW10, HW11, HF92, HU97, HR98, HGD11, HHL+21, HJZ09, HLL+18, IYK16, 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, LC14, Liu08, Liu09, LX17, LY14, LCZ07, LCM07, LCHM10, LCHM13, LWM+02, MI95, Mak99, MG07, MG09, MD98, MB05, MR07, MRH14, MMNB06, MSS20, NW89, NT09, NT94, NN12]. **multipole** [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, WHG94, WJGHG96a, WHG96a, WJGHG96b, WHG96b, WVK21, XWY+08, XJM08, YS18, YRGS13, hYtWbWL08, YR98, YB97, YBZL03, YBZ04, Yin06, YNS+09, YBK+11, YBNY12, YB12, YBNY13, iYNK02, YAO18, YAO20, YSM05]. **multipole** [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, 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** [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, 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, SWW99]. **parallelized** [AiIS+21, 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, LCQF18, LGQZ21, Mil08, OLLL03, PA14, Rok85, Tau03a, WXQL08]. **Potentials** [CJ05, MB16, McK96, Pie93, DM90, 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, JH08, Lab98, LCQF18, Lin95, Liu08, 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]. **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]. **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]. **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]. **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, 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]. **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]. **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, 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, YF98, BSL09, BKM09, CB14, GSC01, GG16, HM95, HS95, SRK+12]. **space-time** [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]. **stable** [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]. **Strategy** [BB87, BCOY93, EG09b]. **stratified** [ZCL+98]. **Stress** [BS19, GG16]. **Strips** [GA96a]. **strong** [Kan15]. **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]. **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].

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[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, 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]. **uniqueness** [YSM05]. **unit** [DKG92c, KS98b]. **Universe** [BADG00, ZGI+10, BAD01]. **University** [IEE94a]. **unknowns** [YBK+11].

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