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(0, +∞) [DO18]. (0, 2) [Lén06]. (1, 1) [GS06].
(l) [SF93]. (n) [BR08]. 1 [Bar06]. 2
[BLM06, CP03, HKKR18, Mar07, Mar11]. 3
[BLM06, BB01, BRC⁺16, BHRT03, TV07].
3500 [JC06]. 9 [Kou97]. [-1, 1] [BCGAM08].
 ${}_1\psi_1$ [Sch06]. ${}_q(1, 1)$ [Arv06]. ${}_q(2)$ [Arv06]. A
[AR07]. A, V [AR07]. α [JN07, VC14]. C^0
[BW12]. C^n [PP06]. e^z [VCL08]. $\exp(-\tau A)b$
[SSS10]. F [GN16, Zha04]. $f(A)b$ [MR17].
 $H(\text{curl})$ [Cal15]. $H(\text{div})$ [Hip97]. $H - LU$
[LO07]. $H_2([0, T], \mu, R^d)$ [Sch03]. H_∞
[CKP15]. k [MSV95, PQRT06]. L [CHR02].
 L^2 [Bar06]. l_1 [Ger17]. Λ [COSV93]. M
[BU07]. R^4 [JO14]. MR^3 [WL11, WL12]. N
[ÁNCQ06]. $N(II)$ [BMSR06]. $N \leq 4$
[Meu12]. P [ZB10, Car11, Car12, Pry14]. ψ
[AR07]. Q [MM99, Arv06, AK06, EMJ16,
IL06, Ost10, Psa04, Roz06]. $q > 1$ [Ost10].
 Q_1 [MC05]. qd [WL11]. QR [AMVW15]. QZ
[VW13]. R [Lub06]. R^3 [DGH14]. R_d
[She04]. s [IE17]. Θ [BB00]. $U_q(\mathfrak{so}(5))$
[Roz06]. V [Zha04]. $x^T A^{-1}y$ [FMR15a]. Z
[BHRT03].
-Bernstein [Ost10]. **-biharmonic** [Pry14].
-classical [MM99]. **-continued** [IL06].
-control [CKP15]. **-curve** [CHR02]. **-cycle**
[Zha04]. **-D** [BRC⁺16]. **-fractal** [VC14].
-Hahn [Arv06]. **-interpolation** [EMJ16].
-matrices [BU07]. **-methods** [BB00].
-numerical [Psa04]. **-orthogonal** [Roz06].
-pinch [BHRT03]. **-point** [Kou97].
-polynomials [AK06]. **-regular** [ZB10].

-regularization [Ger17]. **-smoothing** [GN16]. **-step** [IE17, MSV95]. **-th** [ÁNCQ06]. **-type** [Lén06, WL11].

/9 [dJvdPDV17].

4th [Mar07, Mar11].

5- [dJvdPDV17]. **5-/9-point** [dJvdPDV17].

75th [GOR⁺08].

9-point [dJvdPDV17].

a-posteriori [Gat04]. **Abel** [MG14, Mok15, Mok16]. **Abel-type** [MG14].

abstracts

[Ano09a, Ano10b, Ano13a, Ano14c, Ano15b, Ano15d, Ano16, Ano17b, Ano17c, Ano18c].

accelerated [BGP04, Che99, SSVS12].

accelerating [WNK18]. **Acceleration**

[AS09, AS05a, BK13, Lóp16, Val19, WO97].

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[Ful03, Ves96]. **accurate**

[Bra00, MACI06, TC08, WLR02]. **ACMS**

[HKKR18]. **action** [AS05a]. **adapted**

[Val19]. **Adaptive**

[BFK⁺10, DDS⁺18, JOT08, KKR18, MSV95, Wac13, BMS08a, BMM97, BRS08, CW16, FFK⁺15, Ful97, JG14, KCW18,

KRR16, MR18, NP96, PD17]. **Addendum**

[BBF⁺00a]. **Additive** [MR18, Bre03, DHI03,

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[BC05]. **ADI** [BMS08b, BKS15]. **adjoint**

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aggregation/disaggregation [MMP09].

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algebra [DENP09, FMR15a, Gau02, Sus07].

Algebraic [BBKL15, EMS09, Pop08, AO10,

ABM93, Aré09, Bra00, EMS13, HS08b, HJ09, JN07, JC06, KM96, KM07, LC14, LT18, Man03, MN08, Meu01, Not10, PMLFT09, PGH11, Rom07, Sch93].

algebras [Arv06, JO14, JO17, Opf15].

algorithm [ABM93, AMVW15, BEG15,

BR14, Bar05, BK13, BP03, BW12, Bun97,

BMX07, CL03, Die97, Dis97, Faß96, Faß07,

For02, Gan04, HMRS04, HJ09, JC17, Kou97,

Kre05, LV08, LDB13a, LDB13b, LC14,

Man08, Osb08, PPS18, Ste97b, Tif11, Tu05,

Tu07, TW16, VW13, WNK18, WLHH18,

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[Koe99]. **Algorithms**

[LZ08a, Aur15, BR08, CW16, Cha11, CS94,

DDR95, ENH10, Els05, GKM16, IN11,

JVV12, KCW18, MR18, MH01, Pav99,

PCP06, RKvdDA14, Ves96, ZX17]. **aligned**

[Dis97]. **Almost** [Ade17]. **along**

[Dos08, Sch05]. **Alternating**

[HNP10, WNK18, ZM13]. **Alternative**

[Che06]. **American** [Oos03].

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[Ema10, GN16, Haa00]. **AMGr** [GN16].

Ampère [DG06, Nei14]. **amplitude**

[GSW08]. **anaerobic** [SCCJC09]. **Analysis**

[AR07, BSS09, BDH15, Bre03, CG18, FK08,

HLP10, LMN10, Sch93, Xu06, AM11, ACS00,

AK10, BBD⁺08, BJR⁺09, BDR09, BF12,

CMO18, CCCR08, CC00, Che97, DNV05,

DN11, DSC08, FJMS06, For02, FH13, GS07,

Gau02, GGM12, GO10, HHP13, HLNT18,

HR14, JS18, Kin11, MB06, MC05, MH01,

MX96, MX97, MG14, Nei14, PLM03, SAA09,

SG94, WD08, YNYF15, Yan98]. **analytic**

[JJ10, MY02, MR93, MPS18, Ost10].

analytical [ÁNCQ06]. **Andoyer** [Bre94].

Anger [LP17]. **angle** [GMT16].

anisotropic [ADM07, BBKL15, CL03,

DGP99, MC05, Mav97, NC06].

annihilation [Lor99]. **announcement**

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anti-periodic [Cab07]. **Any**

[DTM17, Sch16]. **AOR** [FMP96]. **Apostol**

[KS18]. **Apostol-type** [KS18]. **Appell** [LP08]. **Application** [OR11, ZK17, Bor09, CMM95, GW10, HLC10, KM08, KLS17, LP17, LKF08, Oos03, Sim10, LP08]. **Applications** [Bar11, BJR⁺09, BB01, BCDI15, BRC⁺16, BCDV06, CMP01, EMJ16, FLMT05, FMR15a, KZ07, NNR99, OS98, RÁRP06, She10, ZM13]. **applied** [BDG04, DS11, EMS13, FS08, JO05, LR16, MST08, PGH11, TV07]. **approach** [AM06, Arv06, Bor09, DG06, FJMS06, FMSV08, GW10, KS18, MM99, MS08, PMLFT09, TMS97, Tif13]. **approximants** [Bar06, Zho06]. **Approximate** [SV10a, BL08, CFM⁺10, ET09, LN10, MPV13, MPV15, WA08]. **Approximating** [Ash17, vBHS14, BR08]. **Approximation** [GSW08, GRS00, VCK08, Yam06a, AR09, AMRT06, ABH17, BEG15, BY98, BK06, BLM06, BSS09, BCDO18, BEJ⁺18, BKK⁺18, Bor09, Del02, ER01, ERSx17, Faß96, FFK⁺15, FP01, FMR15b, GCPP99, HLX14, LT14, Lub06, Man03, MJ11, Mas02, MMN18, Mok16, Nal19, Nav05, Ost10, Rap06, ST08, Sch03, SG98, VB95, VC15]. **Approximations** [BFdP⁺18, FLMT05, Fro09, Kha06, RV08, WA08]. **arbitrary** [LO13]. **arcs** [BDD06]. **area** [Leo06, Leo09, VA09]. **argument** [GRS00]. **arguments** [Pea15]. **arising** [CCC07, DE06, EMS13, NB08a, NRS17, Woh00]. **arithmetic** [DDR95, Lau08]. **Arnoldi** [EMS09, EHJM17, GN13, HS97, HJ09, Mee98, Meu15]. **arrays** [Dam02]. **aspects** [FM02, SAA09]. **assessment** [BBD18]. **assignment** [CC00]. **associated** [Arv06, EV93, HS12, MS06, SG99, Sta02]. **asymptotes** [BEG15]. **Asymptotic** [AD04, BKS18, DB08, FLMT05, Kou97, Dam02, DT09]. **Asymptotics** [HC05, MFMGO05, Sta02, Man06]. **Asynchronous** [FSS97, BMPS95, SME02]. **atmospheric** [Auz18]. **atom** [RR07]. **atomic** [TT05]. **atoms** [ÁNCQ06].

augmented [AVV14, DG06, Gat07, Zít08]. **automatic** [Sch08b]. **autonomous** [HHO14]. **average** [MR18]. **averaged** [DRST16]. **avoiding** [CKD15]. **aware** [Sil03]. **axisymmetric** [KMC11].

B [KK08, ZK17]. **B-spline** [KK08]. **B-splines** [ZK17]. **backward** [AD09, GJV13]. **bacteria** [SCCJC09]. **balancing** [BM05, Wat06a]. **balayage** [Göt06]. **ball** [BLM06, Xu06]. **Banach** [CMO18]. **bang** [Wac13]. **bang-bang** [Wac13]. **barycenter** [OR11]. **Barzilai** [HNP10]. **based** [Bar11, BHN13, BB08, BBK18, BDR09, BDH15, BFK⁺10, CP00, DK13, EL05, EHJM17, Gat04, GSV12, GN16, Gut12, HKKR18, HRT08, HK14, HLP10, HLP15, HLC10, JC17, Kin11, KL18, Lam10, LMR15, MJ11, NP96, Not10, Tif11, YG08]. **bases** [Fer05, MS06, PCP06]. **basic** [FM02]. **basis** [GSV12, HOR08, KCW18, KKR18, LW06, WE13, WA08]. **BDDC** [BPS17, CW16, KCW18, KKR18, PD17, Tu05, Tu07, TW16]. **Behavior** [LM00, Böt04, DB08, KS06]. **behaviour** [FP01, GJV13]. **BEM** [HLP15, Kol12]. **BEM-based** [HLP15]. **Benchmarking** [Ema10]. **bending** [SG94]. **Beowulf** [FO03]. **Bernoulli** [HMRS04]. **Bernoulli-like** [HMRS04]. **Bernstein** [BCGAM08, DRST16, Gau10, Ita06, Lub06, Nal19, Ost10, WA08]. **Besov** [Tik05]. **Bessel** [Man06, Rap06, Ste02]. **best** [BLM06, Bar06, Kha06, Mas02, Ran07, Van07]. **between** [Gau02, LMS09, Mee98, SK06, ZY13]. **beyond** [VW13]. **Bezoutians** [ER14]. **BFGS** [ABHK09, SHH⁺12]. **biased** [BCDO18]. **BiCGSTAB** [EJS03, SF93]. **bidiagonal** [WL12]. **bidiagonalization** [CHR02, HRT08, ZX17]. **Bidomain** [GGM12]. **bifurcation** [SY09]. **biharmonic** [BGS10, CPS18, KRZ16, Pry14, Zha04]. **bilinear** [FMR15a, Kim07b]. **binary**

[KM08]. **Binet** [GM18]. **Binet-type** [GM18]. **Bingham** [AVV14]. **binomial** [JN10]. **bio** [LKF08]. **bio-heat-transfer-equation** [LKF08]. **biofilm** [DE06]. **Biot** [HK18]. **biperiodic** [HR14]. **birthday** [GOR⁺08, RS14]. **bisection** [DDR95, EH15]. **bisection-like** [DDR95]. **Bivariate** [BCDV06, MM09a]. **Block** [Bar15, BU07, CFM⁺10, FLS17, Val19, WL11, AHS17, AK10, CS99, DN11, Dub01, EJS03, EMS09, EHJM17, Fat98, GGM12, HK17, HJ09, HN08b, KN03, KLS17, Lam08b, MPV15, MZLG14, NZ14, SS09, Soo17, TZ17, TLF07, LZ08b]. **Block-proximal** [Val19]. **block-triangular** [GGM12]. **block-tridiagonal** [CS99]. **blocks** [Gre04, GS06]. **blow** [NB08b]. **blow-up** [NB08b]. **blur** [Bar05]. **bodies** [Kro06]. **Boltzmann** [CL03]. **Boosting** [PMLFT09]. **Borges** [JST18]. **Borsuk** [AFHM04]. **Borwein** [HNP10]. **bound** [COSV93]. **boundaries** [VK95]. **Boundary** [ET09, KL12, Ash17, BHN13, BK16, ČF18, Che99, Che09, DB08, ER01, FFK⁺15, GN14, HJ08b, HLP10, KK08, Lam05, LMN10, Mar18, MST08, Nas15, Sch08a]. **boundary-value** [Che09]. **bounded** [AR07]. **Bounds** [Sch02, Vos99, AD04, Bea98, BR08, CHR02, CGT05, CKP15, FSS18, Leo09, LR16, MPS18, PP08, TV18]. **Bruijn** [COSV93]. **bubbly** [TV07]. **bucket** [AO10]. **bucket-sorted** [AO10]. **bulges** [Kre05].

Cache [DHK⁺00, Sil03]. **Calculation** [Kan08, BL08, HLC10]. **calculations** [SK06]. **capabilities** [PLM03]. **Carathéodory** [ST08]. **Cascadic** [LH12]. **case** [BL08, HS08a, HS08b, LDB13a, LDB13b, LT05, MX96, MX97, Ost10, TLF07, Wat06a]. **cases** [TT05]. **Cassini** [VK99]. **Cauchy** [BMP09, CR96, Drm15, JR02, JR04]. **Cauchy-like** [BMP09]. **Cayley** [AMVW17]. **cell** [MM09b, VA09]. **Center** [Bra97]. **centrosymmetric** [ER14]. **certain** [ABBS07, Arv06, BMP09, Nov05]. **CFD** [Ema10]. **CG** [BK02, LT05]. **chains** [BBD⁺08, BU07, BKK⁺18, CG18, FMSV08, HMRS04, Jac10, Tif11, Tif13]. **Chan** [Zei99]. **change** [KCW18]. **Characteristics** [Tik05]. **characterization** [GS94]. **characterizing** [SS08]. **Chebyshev** [BK13, FP01, GN16, HH93, WR09]. **Chebyshev-like** [HH93]. **choice** [CW16, Kin11, Kin13, Wu03]. **Cholesky** [BBF⁺00a, BBF⁺00b, GM04, RT05]. **Cholesky-like** [BBF⁺00a, BBF⁺00b]. **CholeskyQR2** [YNYF15]. **Christoffel** [DK10]. **Ciarlet** [YG96]. **CIP** [Sch08a]. **circle** [Bar06, BDD06, BCDI15, CBGV05, Gau06, Gla08, MS14, SL12, Sin95]. **circles** [Roş09]. **circuits** [KJ09]. **Circulant** [Ng97]. **circular** [CMR12]. **citation** [BDR09, BF12]. **citation-based** [BDR09]. **class** [ABBS07, ENH10, JG14, LT18, MFMGO05, Tik05]. **classical** [Gau02, HK18, LZ07, MM99, RS12]. **clusters** [FO03]. **coarse** [HKKR18, KRR16, MR18]. **Coarsening** [AO10, Bol08, Bra00, BFH⁺15, Dis97, Mav97, Spr02, TV18]. **coefficient** [Lam05, SCCJC09]. **coefficients** [LDB13a, LDB13b, LH12]. **coin** [BCDO18]. **Collocation** [GSV12, JR04, JKM14, AS14, ACS00, ER01, JR02, KK08, KL12, LR16, PGH11, YG08, ZK17]. **column** [PCP06]. **Combinatorial** [PCP06, Tif13]. **combined** [BKK⁺18, PPN13, SSVS12]. **Communication** [BM05, CKD15]. **communication-avoiding** [CKD15]. **commutator** [ET09, Pea15]. **commuting** [She10]. **Comonotone** [VC15]. **compact** [GGCT09, PSC97, SSVS12]. **compact-WENO** [GGCT09]. **companion** [BDG04]. **Comparing** [Spr02]. **Comparison** [LMS09, Sta03, Ful97, JVV12, KRR16, LMM12, Mee98, RV08, VW97]. **complement** [KLS16, Zha00]. **complementarity** [Oos03]. **complete**

[Meu12]. **completion** [RKvdDA14].
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 [AM11, BMX99, Ber04, KP13, KM17, PPS18, SF93, SHZF08, TT05, VCK08].
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Conditional [AS14, BBK18, Dis97].
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 [IL06, Khr06, LB96]. **Continuous**
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Cross-Gramian [BB08]. **Cross-points**
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CT [Bar11]. **cubic** [MYZ18, VC15]. **current**
 [AR07, Kol12]. **curvature** [CHR02]. **curve**
 [CHR02, Sch16]. **curved** [AR09].
curvilinear [Yam06b]. **cut** [SG99]. **cycle**
 [Zha04]. **cyclic** [HK17]. **cylinder** [SG99].
D [BLM06, BB01, BRC⁺16, BHRT03, CP03, HKKR18, Mar07, Mar11, TV07]. **DAE**

[BKO17]. **DAE-index** [BKO17]. **damped** [ZY13]. **Darboux** [BD04]. **Darcy** [AM06, GS07, HJ16, LMS09]. **Data** [RKvdDA14, BB08, DdAR17, FFK⁺15, GK08, GK14, Sil03]. **data-sparse** [BB08]. **dataflow** [EL05]. **Davidson** [SS98, HN08a, SvdVM98]. **Davison** [Sad15]. **deblurring** [BHN13, HJ08a]. **Decay** [BR08, FSS18]. **decaying** [PMLFT09]. **decomposition** [BBD18, BP03, CW16, CS94, Dub99, FKSV07, Gan04, GS16, Haa00, HJV18, Hen94, KRZ16, LO07, LNG15, MM04, Pav99]. **Decompositional** [BBD⁺08]. **decompositions** [MR93, Peñ04, RY15, Ste95]. **decrease** [Dos08]. **dedicated** [GOR⁺08, RS14]. **Dedication** [Pot05]. **deferred** [GK14]. **deficient** [SGG15]. **defined** [Cot06]. **definite** [CMP01, FSS18, GMT16, LT05, LZ07, ZB10]. **definition** [Kno08]. **deflated** [MZLG14, WE13]. **deflation** [CKD15, Gut12, MX15, TV07]. **degenerate** [DE06]. **degree** [Bar06, Gla08, Ran07]. **delay** [CDN09, FMMS08, FL07, GN14, KS06]. **denoising** [BBK18, FM02, LMSY14]. **dense** [Che99]. **dependency** [WD08]. **dependent** [BD17, HOR08, Lam08a]. **deposition** [MM09b]. **Derivation** [Lam08a]. **derivative** [Car11, Car12]. **derivatives** [BK06, PQRT06]. **derived** [Gre04]. **descending** [TDLC09]. **descent** [AEEG08, LMM12, NZ14]. **described** [Mál08]. **detection** [FL07]. **detective** [Lau08]. **determinants** [Sch02]. **development** [GRS00, Pea15]. **developments** [FLMT05]. **devices** [SMS⁺19]. **DGFEM** [FK08]. **diagonal** [VVM09]. **Diameter** [Leo09, Leo06]. **difference** [ÁNACS07, Bra06, Cab07, CP00, CP03, FMR15b, Mar18, MS07, RR07, RV08, SK06]. **differences** [BRC⁺16]. **different** [DJJ11, LMS09, Zha01]. **differential** [Aré09, BSS16, Die97, FL07, GJV13, JN07, KS06, Khr06, KM96, KM07, LT18, MYZ18, MFMGO05, NRS17, Ore10, Sch93, Sch05, SCCJC09]. **differential-algebraic** [Aré09, JN07, KM96, KM07, LT18, Sch93]. **differentiation** [Aur15]. **diffusion** [BZ03, BHRT03, BBKL15, DE06, ELST18, EG06, FK08, FMR15b, Kou97, LDB13a, LDB13b, LR16, MST08, PSC97, PW13, RV08, WLR02]. **dimensional** [ÁNCQ06, Bre03, HK14, RV08]. **dimensions** [Cal15, DG06, Hip97, Kim07a, KRR16, KL12]. **Direct** [CDN09]. **directed** [CEHT10]. **direction** [ZM13]. **Directional** [Mav97]. **Dirichlet** [DG06, For02, GKM16, Gat07]. **disaggregation** [MMP09]. **Discontinuous** [EDG⁺15, Pry14, HLNT18, JS08, LDB13a, LDB13b, SMS⁺19, TW16]. **discrepancy** [VCL08]. **Discrete** [Bre04, Che99, DGH14, FKK10, LO13, AL09, BL06, Bor09, CR15, Faß96, Lor99, Pry14, STO08, VB95]. **Discretization** [Kin13, BHRT03, DE06, GS07, GS16, LMS97, Lis08, LMR15, Mar11, PSC97, Tu07, Wac13, WLR02]. **discretizations** [EDG⁺15, KM07, LMS09, Mar07, TW16, Woh00]. **discretized** [ELST18]. **discretizing** [Che94]. **disordered** [BFK⁺10]. **dispersion** [Kle08]. **Displacement** [CNP94]. **distance** [BBKL15, MS14, NPR08, Smi10]. **distributed** [AH03, FMR15b, Kol12]. **Distribution** [Pri06, Dam02, LMSY14, SK06, SK08]. **distributions** [Nar18, TT05]. **divergence** [NC06, Ste02]. **dLV** [IN11]. **Domain** [CS94, Pav99, AR07, AH12, BBD18, CW16, Dob12, GS16, Haa00, HJV18, HLX14, LO07, MRT03, Mit97, Xu18, Yam06b]. **domain-decomposition** [LO07]. **domain-robust** [Dob12]. **domains** [AR09, CMR12, DK10, EV93, KP13, Kol12,

LMN10, SL16]. **Double** [GMT16, CDN09, LP08]. **downdating** [Bar15]. **DP** [Bre03, Kim07a, KCW18, KKR18, Mar11]. **DR** [MZLG14]. **Dual** [AMRT06, BBK18, CMO18, CCC07, LV14, SM08]. **dual-mixed** [CMO18]. **Duality** [AK06, LO13]. **duct** [HLC10]. **due** [Bre94]. **dynamic** [ABBS07, BC05, BRS08, DH07, EP07, KZ07]. **dynamical** [LR03, Man08, VCL08]. **dynamics** [OR11].

Ed [She06]. **eddy** [AR07, Kol12, NW03]. **Edge** [CKH14, LMR15]. **Edge-based** [LMR15]. **Edge-Preserving** [CKH14]. **effects** [APL04, Kan15]. **efficiency** [Gat04]. **Efficient** [BHN13, Ber04, Che94, FG17, GK14, KN03, QvGvW⁺15, SvdVM98, TV07, BKS15, CKD15, Cha11, HRT08, NN16, PV09, SGB07]. **Eigenfunction** [MYZ18]. **eigenfunctions** [PP06]. **eigenproblem** [FS08]. **eigenproblems** [FMMS08, JG14, OS98, SvdVM98]. **eigenreduction** [Ves96]. **eigensolver** [TC08]. **eigensolvers** [Kny98]. **eigenstructure** [BFS08, CC00, Ita06]. **eigentriplets** [TC08]. **eigenvalue** [AR09, AH10, BMX99, BFS08, CRS94, CKV04, DDR95, EH15, HS97, HP08, KLS16, KN03, KV13, KL18, MW02, NZ14, Sor98, SV10b, SS98, TLL15, TZ17, Var01, Vos99, WSS98]. **eigenvalues** [AD04, Ash17, AMVW17, KP13, MX15, MACI06, NNR99, VVM09]. **eigenvectors** [HS12]. **elastic** [KMC11]. **elasticity** [BBD18, CMM95, Gat07, Lis08, OR11]. **electric** [SMS⁺19]. **electro** [PV09]. **electro-physiology** [PV09]. **electrocardiology** [GGM12]. **electrochemical** [MM09b]. **electromagnetic** [HR14]. **electronic** [DS11, KJ09]. **electrostatic** [GAM05]. **Electrostatics** [Van07]. **Element** [HLP15, AMRT06, AM06, AL08, AD04, BPP15, BMS08a, BB01, BRS08, CW96, Che99, DGP99, DHI03, FFK⁺15, GS16, Gat04, Gat07, HK14, HLP10, HLX14, Kim07b, KL12, KS00, LMN10, LMR15, MC05, Mar07, Mar11, Nei14, NC06, SJ08, SG94, Tu07, Woh00, YG96, Zha04].

elements [Bun97, Che97, GH99, HK10, Sch08a]. **elimination** [HLC10, NU05]. **Elliptic** [VA09, AH04, AH10, BRC⁺16, Bog05, CP00, CS94, DG06, GJV13, Hoh06, LH12, LMR15, Mar07, NZ14, Nov05, TW16]. **Emden** [ABBS07]. **endpoint** [Ill03]. **Energy** [GJV13, Pri06, Ran07, SSVS12]. **Enhanced** [ERSx17]. **Enhancement** [Lam08b]. **ensemble** [SHH⁺12]. **entire** [Ped07]. **entrance** [SK06, SK08]. **entropies** [BFdP⁺18]. **entropy** [Man08, Raj08]. **equal** [Leo06, Leo09, LRL08]. **Equal-order** [ÁNACS07, ACS00, AC06, BB00, BMP09, Bol08, CL03, CQ01, DG06, DB08, DE06, EHJM17, EN08, FFK⁺15, FMR15b, FH13, HJV18, HJ09, KL12, LKF08, MACI06, NND06, Nei14, Pry14, RR07, RV08, SSVS12, ZK17]. **equations** [AHS17, ABJE15, ABBS07, ABM93, AS14, ADW15, Aré09, AM06, AH10, BZ03, BPP15, BBD18, BMS08b, BB14, BKS15, Boc97, BL97, BSS16, Cab07, CMM95, CR96, CCDR08, CDN09, Che94, Cot06, DH07, Die97, Dob12, DHI03, EMS13, EDG⁺15, ET09, EP07, FL07, GS07, Gan04, GSV12, GJV13, HMRS04, HHP13, HJ16, JN07, JR02, JR04, JKM14, KS06, KZ07, Kle08, Koe07, Kou97, KM96, KM07, LMS97, LDB13a, LDB13b, LC14, LT18, LH12, MYZ18, MSV95, MFMGO05, MS08, MG14, Mok15, Mok16, NB08b, Nas15, Ng97, NRS17, Ore10, PV09, Per00, PGH11, Sch93, Sch05, SY09, SF93, Sta03, Sty08, WD08, YG08]. **equidistributed** [GN14]. **equilibrium** [BDD06, BCDO18]. **equispaced** [GK14]. **equivalence** [SM08]. **Error**

[BY98, BB11, DJ06a, HK14, MH01, MPS18, SAA09, YG08, BMM97, CS14, DGP99, Ful03, Gat04, GJV13, LR16, MACI06, NC06, Ore10, PGH11, ST02, YNYF15]. **errors** [SME02]. **estimate** [YG08]. **estimated** [FKSV07]. **Estimates** [FMR15a, BB01, BB11, BMM97, Ful03, HK14, Kha06, MR17, ZN17]. **Estimating** [CS14, BCDO18]. **estimation** [AH03, BY98, FvdMS14, MACI06, NC06, PGH11, PT13, Psa04, ST02]. **Estimations** [BFM12]. **estimators** [DGP99, Gat04, Man03]. **Euler** [BFdP⁺18, Khr06]. **European** [PPN13]. **Evaluating** [BDR09, Car11, ST08]. **Evaluation** [SG99, FG17, KS18, KM17, LW06, SJ08]. **even** [AM11]. **evolution** [AS14, Gan04, HOR08, HHP13, HLNT18, MS07]. **exact** [Kha06]. **examples** [Zho06]. **existence** [AFHM04]. **exotic** [PPN13]. **expansion** [HR14, JN10, LZ07, MYZ18, SvdVM98]. **expansions** [LW06, Mas06]. **Experiences** [Boc97]. **experimental** [CT03]. **experiments** [BJM99, Meu01]. **explained** [Gut10]. **Explicit** [BCDI15, APL04, BEG15, HOR08, JS18, MPV13, MPV15, PPN13]. **exponential** [BKS18, Dam02, FvdMS14, HHO14, KM17, Mas06, PT13, ST08, Sta02]. **exponential-type** [BKS18]. **exponentially** [Mar18]. **exponentials** [Böt04, KLS17, LR04, PMLFT09]. **exponents** [MH01]. **extended** [BEJ⁺18, HJ09, MPV13]. **extension** [CR15, JO14, MPS18, VW13]. **Extensions** [JN07, BCDV06, CS14, MPV15, Sch06]. **exterior** [HRV13, KL12]. **extraction** [HP08]. **extrapolation** [BFM12, DS11, EMS13, MR17]. **Extremal** [RS12, Göt06, HC05]. **extreme** [EV93].

Faber [EV93, HS97]. **factor** [DSC08]. **factored** [DH07]. **Factorization** [ÁNACS07, BY99, GM04, HNP10, Koe07, LS05, RT05, SAA09, SG06]. **factorization/solver** [VVM08]. **factorizations** [BBF⁺00a, BBF⁺00b, OB05, SGB07, WL11]. **Factors** [FO03, Kro06]. **Fast** [Aur15, AMVW15, BCR98, BMP09, JO05, KM17, LW06, Nas15, Ng94, PW13, PK08, TMS97, AC06, BHRT03, BP03, CCDR08, EH15, FGV09, LV08, SG06]. **FDM** [Ade17]. **Fejér** [SL12, ST08, RS12]. **Fekete** [BL08, SV10a]. **FEM** [Ade17, FKK10, HR14, Kol12]. **FEM-FDM** [Ade17]. **FETI** [Bre03, Kim07a, KCW18, KKR18, Mar11]. **FETI-DP** [Bre03, Kim07a, KCW18, KKR18, Mar11]. **FFT** [NP96]. **FFT-based** [NP96]. **FGMRES** [AD09]. **fidelities** [BB11]. **field** [BdPNdP14, HK18, KP13, Opf10, RR07, Tos00]. **Fields** [Hoc11]. **fifty** [Not16]. **Filter** [DSC08]. **filtering** [ABHK09, BP03, Bre16, NP96, SHH⁺12]. **Finding** [PV05, BGP04, Jac10]. **Fine** [Sim06, dJvdPDV17]. **Fine-grain** [dJvdPDV17]. **Finite** [HLX14, AMRT06, AM06, AL08, AD04, BPP15, BMS08a, BB01, BRC⁺16, BRS08, Bun97, CP00, CP03, CW96, Che97, DGP99, FMR15b, GS16, Gat04, Gat07, HK14, HLP10, HK10, Kim07b, KS00, LO13, LMN10, LMR15, LKF08, Mar07, Nei14, NC06, Sch08a, SJ08, Sch16, ST02, Tu07, Woh00, WLR02, YG96, HLP15, SK06]. **finite-element** [AM06]. **First** [CMM95, BMM97, BDR09, CL03, LB96, Pav99]. **First-order** [CMM95, BMM97, CL03, LB96, Pav99]. **fitted** [KS06, KK08, Mar18]. **five** [RV08]. **five-point** [RV08]. **fixed** [CG18, JKM14, Van07]. **fixed-sized** [CG18]. **flexible** [MZLG14]. **floating** [DDR95, SME02]. **flow** [AL09, AMRT06, BKO17, Bir12, Dis97, DDS⁺18, HLX14, HLC10, Kan15, PSS99,

RFHS08, SK06, SK08, TV07, Tu05, Tu07]. **flows** [CR09, Ema10, GGCT09, Kan08, LRL08, Mál08, STO08, Ste97a]. **fluid** [AVV14, AMRT06, CR09, OR11, SV10b, TDLC09, Vos03]. **fluid-solid** [SV10b, Vos03]. **fluids** [Mál08]. **flux** [HJ16]. **FOM** [Sch16, Soo17]. **footnote** [CS99]. **Forchheimer** [LMS09]. **form** [CMM95, Dm15, FMR15a, FGV09, HJ16, NC06, Wat06b]. **forms** [AK10, Zha01]. **formula** [BFdP⁺18, Bre94, Ill03, MPS18]. **formulae** [EMJ16, Not16]. **formulas** [BCDI15, CS14, RGVP99, Roş09]. **formulation** [AR07]. **formulated** [AR09]. **formulation** [AR07, BRC⁺16, CCC07, DHI03, HK18, KCW18, Tu05]. **formulations** [HJV18]. **FOSLS** [BMM97]. **four** [RV08]. **four-** [RV08]. **Fourier** [CQ01, HR14, LZ07, Man06, Ste02]. **Fourier-mode** [HR14]. **Fourth** [Kle08, BFR19, Han06, MYZ18, SSVS12]. **fourth-order** [BFR19, Han06, MYZ18, SSVS12]. **Fowler** [ABBS07]. **Fractal** [Nav05, Nal19, VC14, VC15]. **fractional** [BSS16, Die97]. **fractions** [IL06, Khr06, LB96]. **framework** [Bre03, PD17]. **Fréchet** [Car11, Car12]. **Fredholm** [NNR99, YG08]. **free** [Bol08, BK16, Che09, GM06, Kin11, Kin13, LY14, LT18, SV10b]. **frequency** [DNV05, DdAR17, Gan04]. **Freud** [GAM05]. **Freud-type** [GAM05]. **full** [Bor09, Mit97, Nal19, WLHH18]. **full-Newton** [Bor09]. **full-space** [WLHH18]. **fully** [HC06]. **function** [BMFJ⁺06, BEJ⁺18, Dos08, ERSx17, LZ08a, LW06, LP08, Sta02, VK95]. **functional** [Mas02, RZ12]. **functionals** [ABH17, CGM10, LMM12]. **functions** [AEEG08, ÁNCQ06, BY98, BR08, Bre04, CFÁN09, DT09, DJ06b, FM02, Fro09, FLS17, GSV12, GRS00, Kha06, Koe99, KS18, LP17, Man06, MJ11, MPS18, Ost10, Ped07, Pri96, Rap06, RGVP99, RS12, ST08, Sch08b, Sch05, SG99, SG98, Sin95, Tik05, Zho06, Sha12]. **Galerkin** [BPS17, EG06, EDG⁺15, GW10, HHP13, HLNT18, JS08, Mok16, Pry14, SMS⁺19, TW16, Yam06b]. **gas** [DDS⁺18]. **Gauss** [ACR99, Ash17, Bra97, CS14, DRST16, Gau06, Not16, Osb08, PPS18, Sil03]. **Gauss-type** [Gau06]. **Gaussian** [CDN09, DV12, Sin95, VV18]. **GCDs** [WA08]. **GCV** [CNO08]. **Gegenbauer** [Kei08]. **Gene** [Gau02, GOR⁺08, Man08]. **General** [Bra00, Sch03, BB11, Dam02, Erh95, KMFO05, LMN10, Pop08, Soo16, Zho06]. **generalised** [FS08]. **generalization** [AEEG08, MJ11, PV09]. **Generalizations** [Hoc05, Bre94, MPS18]. **Generalized** [RÁRP06, AL09, BD17, DRST16, KKR18, KL18, LC14, MFMGO05, Nas15, OS15, SvdVM98, Sor98, Sty08]. **GeneRank** [BK13, SEH14]. **generated** [FGV09]. **Generating** [BSDMGFTR09, BKS15]. **generators** [Els05]. **generic** [JJ10]. **geometric** [JVV12, Lóp16]. **George** [Pot05]. **Gerschgorin** [KV95, VK95]. **Gersgorin** [FKSV07, VK99, Var01, VCK08]. **Gersgorin-type** [VK99, Var01]. **Gershgorin** [CKV04]. **Gershgorin-type** [CKV04]. **GEW** [ZK17]. **ghost** [Van07]. **Gilbert** [BPP15]. **Givens** [JO05]. **GK** [WL12]. **global** [BEJ⁺18, Gra16, KM96, LDB13a, LDB13b, Ore10]. **global-in-time** [LDB13a, LDB13b]. **globalized** [CR09]. **GMRES** [DGH14, DTM17, EMS09, Erh95, IE17, LZ08b, MZLG14, Meu12, Sim10, Soo16, Soo17, TLF07, WE13, Zít08]. **GMRES-Type** [DGH14, Soo16]. **Golub** [Gau02, GOR⁺08, Man08, ZX17]. **Google** [DN11]. **Google-like** [DN11]. **Gordon** [BKS18, GSV12]. **governing** [SV10b]. **GPU** [JO08, dJvdPDV17]. **GPU-type** [dJvdPDV17]. **graded** [Ste95]. **Gradient**

[LMM12, LR03, BBK18, CKD15, Dos08, GJV13, KN03, Lam10, NP96, ST02].
gradients [Dub01]. **grain** [dJvdPDV17].
Gram [Bar15]. **Gramian** [BB08]. **graph** [Els05, NN16]. **graphics** [NND06]. **graphs** [BFdP⁺18, BF12, HS12]. **gravity** [MM09b].
grid [Bol08, DHK⁺00]. **grids** [ADM07, BSDMGFTR09, Bun97, GN14, LP09, VA09].
group [CL03, GK08, Ore10, Roz06].
grouping [Auz18]. **growing** [CG18].
growth [KM08, SCCJC09]. **Grüss** [MJ11].

H [Gau02]. **Hadamard** [KM08]. **Hahn** [Arv06]. **half** [BK06, CBGV05]. **half-line** [BK06, CBGV05]. **Halperin** [Lóp16].
Hamiltonian [ADW15, BMX99, BFS08, Faß07, MW02, Wat06b]. **Hammerstein** [Mok16]. **hand** [BK02, EJS03, JST05, LZ08b, MZLG14].
Hankel [Drm15, ER14, Ng94]. **harmful** [Wat06a]. **Harmonic** [Bea98, HP08, DTM17, EDG⁺15, Hoc05].
having [Ped07]. **heat** [HJV18, KJ09, LKF08, NB08b]. **Hellan** [KRZ16]. **Helmholtz** [EN08, KL12]. **help** [Ger17]. **Hermite** [Ash17, BCDI15, MM09a, MJM16, She04, Sta02, Sta06, VV18].
Hermite-type [BCDI15]. **Hermitian** [ABH17, CMP01, EH15, Fro09, FSS18, HS97, KL18, PP08, ZB10]. **Herrmann** [KRZ16].
Hessenberg [AHS17, JO05, TT05, VW13].
Hessenberg-upper [VW13].
heterogeneous [BHRT03, KKR18]. **HHT** [JN07]. **HHT-** [JN07]. **Hierarchical** [Bol08, DFV09]. **hierarchy** [DDS⁺18]. **High** [CP00, Mar18, Mok15, Aré09, GK14, Kim07b, Lam08a, PSC97, Ste97a].
High-order [CP00, Mar18, Mok15, GK14, Kim07b, Lam08a]. **higher** [Bun97, Ng97, Sch08a]. **higher-order** [Ng97]. **highly** [Bra00, BFK⁺10, GS06].
Hilbert [GHS14, MF06, Sch03, Yam06a].
Homogeneous [HN08a, ČF18, Gat07, Yat06]. **homotopy**

[ZY13]. **Householder** [SAA09]. **hull** [TLF07]. **hulls** [Gre04]. **hurricane** [Ful97].
Hybrid [GGCT09, AMRT06, Per00, Tu07, CNO08].
hybridizable [TW16]. **hydrogen** [RR07].
hydrogenlike [ÁNCQ06]. **Hyper** [FFK⁺15]. **Hyper-singular** [FFK⁺15].
hyperbolic [HNS04]. **hypergeometric** [ÁNACS07, CFÁN09, Cot06, DT09, DJ06b, GRS00]. **hypergeometric-type** [ÁNACS07, CFÁN09]. **hypersingular** [DO18]. **hypocycloidal** [EV93].

ideal [She10, TLF07]. **identification** [KJ09]. **Identifying** [DdAR17, FMSV08, Tif11]. **IDR** [Gut10, Zem17]. **II** [FFK⁺15, KV95, Lui11, MX97, Sha12]. **III** [CG18, VK95]. **ill** [Kin11, Kin13, NR14].
ill-conditioned [Kin13]. **ill-posed** [Kin11, NR14]. **ILU** [BJM99, LS05]. **Image** [NO02, BHN13, BBK18, CCC07, HJ08a, JC17, LMSY14, ZM13]. **images** [Bar05, NO02]. **imaging** [Bar11, DENP09].
imbalance [NRS17]. **imbedding** [MRT03].
Impact [MM09b]. **implementation** [CT03].
Implementing [JO08]. **Implicit** [APL04, PPN13, AS09, FMR15b, LN10, Mál08, Sch93]. **Implicit-explicit** [PPN13].
Implicitly [BR14, CR09, Bre16, CRS94].
Improved [AS12, BGP04, CKP15, TV18, PPN13, WD08]. **Including** [DGH14, KS18, WR09]. **inclusion** [CKV04, Hoc11, Var01]. **incompressible** [BBD18, LRL08, Mál08, OR11, Per00, RFHS08, STO08]. **inconsistent** [HH93].
Incremental [KLS17]. **indefinite** [SG06].
independent [AO10, Kin13]. **index** [Aré09, BKO17]. **induced** [Nar18].
inducing [MH17]. **inequalities** [Bre04, LO13, MJ11, Mas02, Rap06].
inequality [Gau10, Ger17, KZ07, Yat06].
inertia [KV13]. **Inexact** [DSSS13, WSS98, BBMP06, FS08, HLC10, Yan98]. **inf**

[LRL08]. **inf-sup** [LRL08]. **infants** [LKF08]. **infinite** [BEN94, MX15]. **influence** [Els05, Xu18]. **Information** [DGH14]. **initial** [Aré09, BK16, GN14, HJ08b, Lam05, Sch16]. **initial-boundary** [BK16, HJ08b, Lam05]. **initial-boundary-value** [GN14]. **initialization** [BGP04]. **inner** [BEN94, BMSR06, Mee98, VB95]. **inner-outer** [BEN94]. **input** [CC00, MX96, MX97]. **integrable** [MJ11]. **integral** [CCDR08, CDN09, Che94, DJ06b, FFK⁺15, HLP10, JR02, JR04, JKM14, MG14, Mok15, Mok16, Nas15, Ng97, PGH11, Sus07, YG08]. **integral-algebraic** [PGH11]. **integrals** [Car12, DO18, FLMT05, LP08, Nov05, ST08]. **integrands** [Atk04, Ill03]. **Integrating** [Sha12]. **integration** [DO18, GK14, KL18]. **integration-based** [KL18]. **integrator** [HHO14]. **integrators** [BKS18, ST08]. **Interaction** [RFHS08, JS18]. **Interconnecting** [HLP15]. **interface** [Ade17]. **intergrid** [Che97]. **interior** [BOS08, BGS10, BW12, BPS17, JO08]. **interlacing** [DJJ11]. **internal** [Ema10]. **Internality** [DRST16]. **interplay** [Gau02]. **interpolation** [BB14, BCDI15, BCDV06, Bre94, Dam02, Del02, EMJ16, GM06, GCPP99, Gla08, GPT11, GK08, KS18, Lén06, Lén10, LRL08, MM09a, Opf15, PMLFT09, She04, SV10a, Van07, VC14, vBHS14]. **interpolatory** [HNS04, RS12]. **interpretation** [GAM05, GJV13]. **interval** [BCGAM08, JR02, JR04]. **intervals** [BDD06]. **introduction** [FLMT05]. **invariance** [AO10]. **invariant** [KQT13, SS08]. **invariants** [KM96]. **Inverse** [BLM06, DGH14, BdPNdP14, CGM10, CFM⁺10, FS08, Göt06, LN10, LY14, PMLFT09]. **inverse-free** [LY14]. **inverses** [FSS18, PCP06]. **Inversion** [ER14, DdAR17, LR04, MPV13, MPV15, RKvdDA14]. **invert** [Mee98]. **involved** [FO03]. **involving** [DT09, SF93]. **irreducible** [NPR08]. **irregular** [BSDMGFTR09, Cal15]. **Isogeometric** [CPS18, HLNT18]. **Isotropic** [NC06]. **issues** [MMP09]. **iterated** [BD17]. **iteration** [BMS08b, BDG04, Bre16, BEN94, Dub99, Fat98, FS08, Lam08b, MS06, MSS15, NZ14, VVM09, WR09, Yan98]. **iterations** [CNP94, HJ08a, NP96, Sch16, SME02, ZN17]. **Iterative** [CCC07, LNG15, NND06, Bar11, Bog05, BW12, Che94, DN11, DSC08, JG14, KRR16, MSV95, MMP09, NNR99, Ng94, PW13, Sty08, ZB10].

Jacobi [SS98, DJJ11, Gau10, HK17, HN08a, KMFO05, SvdVM98]. **Jacobian** [NU05]. **Johnson** [KRZ16]. **Joint** [LO07]. **Jordan** [Gre04, TLF07]. **jump** [LH12].

Kaczmarz [Pop08]. **Kahan** [ZX17]. **Kalman** [ABHK09, SHH⁺12]. **Kantorovich** [AFHM04]. **kernel** [Ita06, Nas15, LT94]. **kind** [Mok16, NNR99]. **Klein** [BKS18, GSV12]. **Korteweg** [Kle08]. **Kronecker** [BBD⁺08]. **Kronrod** [ACR99, MPS18, Not16]. **Krylov** [BSS09, BFS08, Cha11, DSSS13, EN08, FP01, FLS17, GS15, GNR15, GHS14, Gut12, Lam05, Lam08b, LY14, MPV13, MPV15, MS06, Meu17, WLHH18, WO97, Wei94, ZN17]. **Kutta** [AS14, Bir12, GS94, LT18].

L [Peñ04]. **lacunary** [Lén10]. **Lagrange** [MRT03, WLHH18]. **Lagrangian** [DG06]. **Laguerre** [CC97, Mas02, MMN18, SSS10]. **Lamé** [MFMGO05]. **Laminar** [Kan15, Kan08]. **Laminar-turbulent** [Kan15, Kan08]. **Lanczos** [BY98, BEJ⁺18, Bre16, CRS94, CHR02, CNO08, Fro09, HRT08, Lam08b, Mee98, PPS18, TZ17, TC08, ZX17]. **Lanczos-hybrid** [CNO08]. **Landau** [BPP15]. **Langenhop** [KZ07]. **Laplace** [LP08]. **Laplacian** [EN08, NN16]. **Large**

[ABHK09, LV14, NW03, ABJE15, AS09, AS12, ABH17, BMS08b, BFS08, BKS15, Böt04, CRS94, Cha11, HS97, HJ09, LY14, LR03, OS98, SG98, Sor98, WSS98].

Large-eddy [NW03]. **Large-scale** [ABHK09, LV14, ABJE15, BMS08b, BFS08, HJ09, LR03]. **larger** [Kre05]. **Larsen** [PV09]. **laser** [JS18]. **latitudinal** [Roş09]. **lattice** [ÁNACS07, Che09]. **Laurent** [CGM10, CBGV05, Pri96]. **Laurent-type** [Pri96]. **Lavrentiev** [Neu16]. **law** [HS12, KV13, Mál08]. **layer** [KS06, KMC11, MM09b]. **layers** [Auz18]. **laying** [Sil03]. **LBB** [WD08]. **LDU** [Peñ04]. **Least** [HJ16, Aco06, BMM97, BY99, Boc97, Bor09, CMM95, CNP94, CL03, Faß96, GPT11, KS00, LV08, LV14, MS08, Ng94, Osb08, Pav99, VB95, WNK18, ZM13]. **least-square** [Boc97]. **least-squares** [CL03, Faß96, GPT11, KS00, WNK18, ZM13]. **Left** [LZ07]. **Left-definite** [LZ07]. **Legendre** [BK16, PGH11, SG99]. **Lehmann** [Bea98]. **Lehmer** [COSV93]. **Leja** [BCR98]. **lemma** [CGT05]. **lemniscatic** [SL16]. **level** [BBD18, Cal15, Han06, HLC10, Kin11, Kin13, LMS97, TV18]. **level-free** [Kin11, Kin13]. **Levinson** [GH94, VMV07]. **Levinson-like** [VMV07]. **Lie** [Ore10]. **Lifshitz** [BPP15]. **like** [BBF⁺00a, BBF⁺00b, BGP04, BMP09, DN11, DDR95, HH93, HMRS04, LP09, Mál08, MVV09, Ng97, VMV07]. **limited** [ABHK09, SHH⁺12]. **line** [BK06, CBGV05, VA09]. **linear** [Aco06, Ade17, AS12, AS05a, BPP15, Ber04, CMM95, CGM10, CC00, CFM⁺10, Che94, DENP09, ER01, EJS03, Ema10, FMR15a, Gat07, Gau02, GSW08, GS06, HH93, HHP13, JST05, JO08, KQT13, Kin11, KM96, LB96, MSV95, MJ11, MZLG14, Meu17, MS08, OR11, Oos03, Ore10, Pop08, SGG15, SF93, SHZF08, Soo16, SME02, Sta03, TLL15, TZ17, VMV07, ZB10, ZM13]. **linearities** [NU05]. **linearly** [Sch93]. **link** [BF12]. **liquid** [BKO17]. **LMS** [NP96]. **Local** [BMM97, KM96, LRL08, Man03, APL04, BEG15, EV93, Fat98, MST08]. **Locality** [RT05]. **Localized** [Fer05]. **Locally** [HS12, KN03]. **location** [Meu15]. **long** [Ste97b]. **Look** [GH94]. **Look-ahead** [GH94]. **loop** [BC05]. **Lothar** [RS14]. **Low** [BSS16, Sty08, BKK⁺18, GO10, Kle08, SGB07, TDLC09, WA08]. **Low-rank** [BSS16, Sty08, BKK⁺18, GO10]. **lower** [AD04, Cab07, COSV93]. **LSQR** [BR14]. **LU** [BY99, SGB07]. **LU-factorizations** [SGB07]. **lumpings** [Jac10]. **Lyapunov** [BKS15, FH13, MH01, Sch05, Sty08]. **Lyapunov-type** [Sch05]. **Lyndon** [KS18].

machines [JOT08]. **Maclaurin** [BFdP⁺18]. **magnetic** [BHRT03, DdAR17, RR07]. **Majorization** [PP08]. **Man** [Sad15]. **manifold** [ER01]. **many** [Man06, RKvdDA14]. **Mapping** [CEHT10, CMR12, LT94, Lui11]. **mappings** [AH12, FP01]. **Maps** [Gra16, DK10, Rom07, SL16]. **Markov** [BBD⁺08, BU07, BKK⁺18, CR15, FMSV08, HMRS04, Jac10, Tif11, Tif13]. **mass** [BKO17, WR09]. **massive** [BFH⁺15, TV18]. **matching** [GS07]. **Mathematical** [Mál08]. **Matlab** [Sha12]. **Matrices** [AR14, ABH17, Aur15, AMVW17, BSS09, BBF⁺00a, BBF⁺00b, BU07, BR08, BDG04, BMP09, BDH15, Böt04, BEN94, CMP01, DN11, Drm15, EH15, Erh95, Faß07, FGV09, Fro09, FLS17, FSS18, HS12, HS02, HN08b, JO05, Kei08, KV95, KM08, LS05, LY14, LT05, LT14, LR04, MPV15, MSS15, MVV09, Opf10, PP08, She10, SG98, Sim10, SF93, Smi10, Ste95, Ste97b, VVM09, VVM08, VK95]. **matricial** [GRS00]. **Matrix** [LB96, LR04, RY15, AHS17, AEEG08, ABJE15, AM11, ABH17, AK10, BJR⁺09, BEJ⁺18, BM05, BK16, CP03, Car11, Car12, CGT05, Dub99, EKPR19, EST06, ERSx17, Fro09, FH13, GW10, GMT16, HNP10, HMRS04,

Hoc11, JVV12, KLS17, LZ08a, MS14, MY02, MACI06, NPR08, PV05, Psa04, QvGvW⁺15, ST08, SS08, Sin95, TMS97, TT05, TC08, VCK08, Vos99, WR09, Wat06b, WA08]. **matrix-free** [BK16]. **matrix-vector** [BM05]. **Max** [LT14]. **Max-min** [LT14]. **maximum** [FKK10, OS15]. **maximum/minimum** [OS15]. **Maxwell** [BPP15, EDG⁺15]. **MCMC** [BHN13]. **MCMC-based** [BHN13]. **mdLVs** [IN11]. **mean** [JVV12]. **meander** [LP09]. **meander-like** [LP09]. **means** [BDR09]. **measure** [BDD06, SL12]. **measurements** [RKvdDA14]. **measures** [BCGAM08, EST06, HC05, Man06]. **mechanics** [JN07]. **media** [AMRT06, Tu05, Tu07]. **Meixner** [dMPPR99]. **Mellin** [JKM14]. **membrane** [PV09]. **memory** [ABHK09, SHH⁺12]. **meromorphic** [BLM06]. **mesh** [ELST18, KS06]. **meshes** [BC09, CS94, DGP99, LO13, MC05, OR11]. **meta** [Jac10, Tif11]. **meta-stable** [Tif11]. **metastable** [FMSV08]. **method** [AEEG08, ABJE15, AS05a, AH03, Ash17, ACS00, AH10, ABHK09, BZ03, Bar11, BMS08a, BFS08, BBK18, BEJ⁺18, BBMP06, BL97, BOS08, BGS10, BW12, BPS17, BK16, Cab07, CRS94, Cal15, CFÁN09, CKD15, CW96, CR09, CQ01, Che09, CNO08, CG18, DGP99, DSC08, Dub01, ELST18, EKPR19, EH15, EL05, EG06, EHJM17, EN08, Gat07, GJV13, HOR08, HS08b, HJ16, HK14, HS97, Hip97, HLP10, Jac10, JO07, JS18, JG14, JN07, JO08, JR02, JS08, KS06, KK08, Kim07b, KL12, KN03, KRZ16, LMS97, LMN10, LY14, LP08, Lóp16, LP17, LKF08, LR03, MYZ18, Mar07, Mar11, Mee98, MZLG14, Meu17, Mit97, MACI06, MG14, Mok15, MP08, NND06, NN16, NNR99, NC06, Not10, OS98, PV09, Per00, PGH11, Sad15, SMS⁺19]. **method** [SSVS12, SvdVM98, STO08, ST02, TZ17, Woh00, Wu03, Yam06b, YG08, ZK17, ZY13, ZM13, Zít08]. **methodology** [CL03]. **Methods** [DGH14, AMRT06, AM06, AD04, BEG15, BB00, BSS09, BB14, BKS15, BRS08, Boc97, Bog05, BDH15, BKK⁺18, BFH⁺15, BMPS95, CCDR08, CDN09, CMP01, CCC07, Che97, DN11, DSSS13, EDG⁺15, EMS09, FFK⁺15, FP01, FSS97, FLS17, Ful97, FMP96, Gan08, GS16, Gat04, GS15, GN13, GNR15, GW10, GSV12, GS94, GN16, GHS14, Gut12, HNP10, Han06, HK17, HKKR18, Hoh06, HLC10, JST05, JR04, Khr06, Kim07a, KKR18, KS00, KL18, Lam05, Lam08a, Lam08b, LNG15, LT18, LM00, LMR15, MSV95, MMP09, MR93, MN08, NW03, Nei14, Ng94, Ore10, Pav99, PSS99, PPN13, Pry14, RT05, SG06, Sch05, SdS06, SGG15, Soo16, Sor98, SS98, Sty08, TV07, TV18, Tos00, Val19, VW97, Wei94, Xu18, ZB10, Zha04, HLP15]. **MHD** [LMS97]. **Micchelli** [MPS18]. **microscopy** [EKPR19]. **microwave** [DENP09]. **mid** [Sch93]. **mid-point** [Sch93]. **Mimetic** [BC09, BRC⁺16]. **min** [LT14]. **min-max** [LT14]. **Minimal** [Gla08, KV95, VK95, ABJE15, VCK08]. **minimax** [BCDO18]. **Minimization** [HS08a, Wei94, Kin11, RZ12, SHZF08]. **minimization-based** [Kin11]. **minimum** [Del02, Kan08, OS15, Vos99]. **minors** [KM08]. **MinRes** [Kol12]. **Miranda** [AFHM04]. **mixed** [AMRT06, AM06, AL08, AD09, Bra06, CMO18, Gat04, Gat07, HS08a, Han06, HJV18, HK10, JS08, LMN10, MST08, NC06, Tu05, YG96]. **mixed-hybrid** [AMRT06]. **mode** [HK14, HR14]. **Model** [Auz18, BB08, BF12, Cha11, DDS⁺18, DHI03, EL05, HK18, LMS09, MJ11, PK08]. **modeling** [DE06, Raj08]. **modelling** [NB08a]. **models** [BDR09, JC17, SCCJC09]. **modes** [KMC11]. **modification** [SL12]. **modifications** [GO10, SGB07]. **Modified** [SG94, DT09, Lam08a, Mok15, Rap06]. **moduli** [HRV13]. **Moment** [EST06]. **moments** [BFM12, Lam08a]. **Monge**

[DG06, Nei14]. **monic** [Psa04]. **monomial** [FvdMS14]. **monomial-exponential** [FvdMS14]. **Monotone** [Fro09, VC15, Bog05, MP08]. **monotonicity** [CR15, VK95]. **Morley** [Mar07, Zha04]. **mortar** [CW96, GS07, Kim07a, Mar07, Mar11, Woh00]. **mortaring** [HJ08b]. **motion** [VCL08]. **moving** [BEG15, HLX14, RFHS08]. **MR** [LT05]. **MSC** [TMS97]. **MSC/NASTRAN** [TMS97]. **Mühlbach** [Bre94]. **Multi** [CQ01, GN13, CC00, CL03, DdAR17, FL07, MX97]. **multi-frequency** [DdAR17]. **multi-group** [CL03]. **multi-input** [CC00, MX97]. **Multi-parameter** [GN13]. **Multi-symplectic** [CQ01]. **multi-term** [FL07]. **Multidimensional** [HNS04]. **multifrontal** [EL05]. **Multigrid** [AVV14, BKK⁺18, Dis97, Hip97, HS02, LT94, AO10, AH03, BZ03, BDH15, BL97, BFK⁺10, Bun97, CS94, CL03, Che97, Den97, DHK⁺00, Ful03, GW10, JC06, KN03, Kou97, LH12, LM00, Man03, Mit97, NW03, NN16, Not10, Oos03, PSC97, Per00, PSS99, Pop08, SSVS12, Ste97a, WO97, Woh00, Zha04]. **multiharmonic** [Kol12]. **Multilevel** [KS00, MRT03, BBKL15, BFH⁺15, DSC08, EN08, Ful97, JC17, LW06, MN08, Meu01, QvGvW⁺15, Spr02, TMS97, VW97]. **multiparameter** [BF12, HP08]. **multipatch** [HLNT18]. **Multiple** [VV18, EJS03, JST05, LZ08b, MYZ18, MZLG14]. **multiplication** [BM05]. **multiplicative** [ELST18]. **multipliers** [MRT03]. **multiply** [CMR12, DK10, SL16]. **multiresolution** [MB06]. **Multiscale** [HKKR18, Bra97, FM02, MR18]. **multishift** [ABM93]. **multisplitting** [BMPS95, FMP96]. **multivariate** [BP07, EKPR19, Kro06, PT13, Zho06, vBHS14]. **Müntz** [Mok16, Nal19].

Nash [BCDO18]. **Nash-equilibrium** [BCDO18]. **NASTRAN** [TMS97]. **nature** [BC05]. **Navier** [Boc97, ET09, Mav97, Per00]. **near** [Van07]. **nearly** [BFK⁺10, Smi10, Tif13, VA09]. **negative** [Boc97, Ped07]. **network** [AM06]. **networks** [BKO17, CEHT10, DDS⁺18]. **Neumann** [Lóp16, BHN13, BFdP⁺18, Che09, GKM16, KL12, Nas15, Tos00]. **Newbery** [Faß96]. **Newman** [COSV93]. **Newton** [BMS08b, WLHH18, BBMP06, Bor09, Bre94, HLC10, JO07, NP96, Osb08, WE13, WSS98, ZY13]. **Newton-ADI** [BMS08b]. **Nikiforov** [CFÁN09]. **Nikol'skin** [Tik05]. **Nitsche** [HJ08b]. **nodal** [SJ08]. **nodes** [Roş09]. **Noise** [HJ08a, Kin11, Kin13]. **Non** [FSS18, FMP96, GS07, dMPPR99, ACR99, AVV14, BC09, BKS18, CMO18, Dis97, Gat07, Haa00, HS97, HHO14, HLP10, Jac10, JJ10, MN08, Mok15, RZ12, Sim10, Sta03, ZB10]. **non-aligned** [Dis97]. **non-autonomous** [HHO14]. **non-convex** [RZ12]. **non-generic** [JJ10]. **non-homogeneous** [Gat07]. **non-linear** [Sta03]. **Non-matching** [GS07]. **non-overlapping** [Haa00]. **non-positive** [ACR99]. **non-regularized** [AVV14]. **non-relativistic** [BKS18]. **non-reversible** [Jac10]. **non-smooth** [Mok15]. **non-stagnation** [Sim10]. **Non-standard** [dMPPR99, CMO18, HLP10]. **Non-stationary** [FMP96]. **non-symmetric** [MN08]. **Non-Toeplitz** [FSS18]. **non-uniform** [BC09]. **Noncommutative** [Sch06]. **nonconforming** [AD04, Che97]. **nondivision** [Opf15]. **nonharmonic** [For02]. **nonlinear** [AS09, Bor09, CQ01, Che09, DENP09, DB08, FKK10, FK08, HLC10, JG14, Kle08, KS00, KV13, MP08, WO97]. **nonlinearity** [MYZ18]. **nonlocal** [APL04]. **nonnegative** [HNP10]. **nonnegatively** [Bar05, Bar11]. **nonnegativity** [CLRS04]. **nonoverlapping** [PV05]. **nonsmooth** [Sch08b]. **nonstandard** [BB01]. **nonsymmetric** [CFM⁺10, FS08, LZ08b, MSV95, NB08a].

Nonuniform [AR14]. **norm** [ABJE15, Boc97, CGT05, Del02, HS08a, SG98]. **normal** [BSS09, LT14, SK06, SK08, Smi10]. **normality** [NPR08, TT05]. **normally** [FKSV07]. **norms** [EH15, Kro06]. **note** [Aré09, BMX99, Faß96, Gat04, GHS14, Neu16, SS09, Ves96, Yat06, ZY13]. **null** [MVV09]. **number** [AK10, BP07, Els05, JO17, Kan08, Kan15, Ste97a, TDLC09]. **numbers** [KS18, MS06]. **Numerical** [ACS00, BBD18, BJM99, BFR19, CMO18, DENP09, KS18, MR93, Meu01, MACI06, NB08b, SY09, SK06, SK08, STO08, TDLC09, WD08, Zha01, ÁNCQ06, ABM93, AH04, BMX99, CCDR08, Che09, DG06, DB08, Die97, FM02, Gau02, GN14, GJV13, Gre04, LMS09, LMM12, Psa04, Rap06, Sch03, Sch05, TLF07]. **numerically** [Aré09]. **numerics** [FL07].

O [BR08]. **Oblique** [JST05, Lam10]. **observer** [EHJM17]. **obstacle** [BRS08]. **obtain** [AD09]. **Obtaining** [CGT05]. **occasion** [GOR⁺08, RS14]. **occluded** [AC06]. **ocean** [DHI03]. **odd** [AM11]. **ODEs** [AS09, AS12]. **off** [SG99]. **one** [AL09, EH15, Ill03, JO14, MS08, RV08, She06, Yam06b]. **one-dimensional** [RV08]. **one-sided** [JO14]. **onto** [AS05a, CMR12, SL16]. **Open** [BMFJ⁺06, HS08b]. **Operational** [Mok16, MG14]. **operator** [BD17, HS08a, JG14, KK08, Koe07, Lam10, NZ14]. **operator-dependent** [BD17]. **operators** [Aco06, ABH17, BFM12, Che97, FG17, HOR08, HLP10, Lor99, NNR99, NC06, RY09, Sus07]. **Optimal** [ADM07, Lis08, Ade17, Auz18, BMS08a, DSSS13, FFK⁺15, JST18, KN03, Kol12, Meu17, Neu16, SAA09, Wac13, vBHS14]. **Optimality** [NU05]. **Optimality-preserving** [NU05]. **optimization** [BSS09, DHK⁺00, JC17, LR03, QvGvW⁺15, WLHH18].

optimization-based [JC17]. **optimized** [EDG⁺15, LDB13a, LDB13b, Xu18]. **Optimizing** [Bir12]. **optimum** [Dub99]. **option** [KLS17]. **options** [Oos03, PPN13]. **order** [ABBS07, BMM97, BFR19, BMSR06, Bun97, CMM95, CP00, Cha11, CL03, Die97, EH15, FMR15b, GK14, Han06, HHP13, Kim07b, Kle08, Lam08a, LB96, MYZ18, Mar07, Mar11, Mar18, Mok15, Ng97, NC06, PSC97, Pav99, PK08, Sch08a, Sch08b, SSVS12, TW16, Zho06, LRL08]. **orderings** [BJM99]. **ordinary** [MYZ18, Ore10, Sch05]. **Orthogonal** [Aco06, CBGV05, Gau99, IL06, Koe07, LP09, AK06, Che06, Cot06, FLMT05, GCPP99, GAM05, Koe99, Lor99, MM99, Nar18, RÁRP06, Roz06, SL12, Sch02, Sim06]. **Orthogonality** [KMFO05, dMPPR99]. **Orthonormal** [VB95, MY02, Mas06]. **orthonormalization** [Zem17]. **Oscillation** [ABBS07, DH07]. **oscillators** [ÁNCQ06]. **Oscillatory** [Sha12]. **Ostrowski** [MJ11]. **other** [JO14, Sch05]. **outer** [BEN94, LNG15]. **ovals** [VK99]. **over-penalized** [BOS08, BGS10]. **overlapping** [Cal15, Haa00, HKKR18, MP08]. **overview** [BFH⁺15]. **oxymoron** [Kny98].

Padé [BY98, GH94, Sta02, Sta06, Zho06]. **page** [Ano09b, Ano10c, Ano13b, Ano14d, Ano15c, Ano15e, Ano17d, Ano17e, Ano18d]. **pair** [COSV93]. **pairs** [GMT16]. **pantograph** [BB00]. **parabolic** [Ade17, AS14, Bog05, DB08, DSSS13, FKK10, GKM16, GN14, HJ08b, HHO14, HLNT18, MP08, SG99]. **Parallel** [BMPS95, HC06, BZ03, BJM99, BM05, CMP01, CG18, DDR95, Erh95, FMP96, Haa00, HRT08, Mit97, SK06, SME02, VVM08, dJvdPDV17]. **Parallelism** [WE13]. **Parameter** [FvdMS14, HK18, KS06, KK08, PT13, AH03, BCDO18, BMS08b, BFR19, BD04, GN13, HOR08, Kin11, Kin13, Kno08, Pea15, Wu03].

parameter-dependent [HOR08].
Parameter-robust [HK18, Pea15].
Parameter-uniform [KS06, KK08].
parameterized [SY09]. **parameters** [BKS15, ENH10, KMFO05]. **parametric** [Ber04, MJ11]. **parametrized** [Faß07].
Parareal [DSSS13]. **Parareal-in-time** [DSSS13]. **Part** [CG18, FFK⁺15, LDB13a, LDB13b]. **partial** [GJV13, VCL08, Zem17]. **particular** [JKM14]. **partition** [Leo06, Mit97, VK95].
partitioned [KV95, TLL15, VK95].
partitioning [Els05, MH17]. **partitions** [Leo09]. **path** [Dos08, JJ10]. **PDE** [Lam08a, QvGvW⁺15, RKvdDA14].
PDE-constrained [QvGvW⁺15]. **PDEs** [Hoh06]. **penalized** [BOS08, BGS10].
penalty [BOS08, BGS10, BW12, BPS17].
pencil [EKPR19, VW13]. **pencils** [BMX07, Hoc11, MX15]. **performance** [FO03, Xu18]. **perilous** [Lau08]. **period** [DV12]. **Periodic** [Rom07, Cab07, FL07, Hen94].
permeability [DdAR17]. **perspective** [Pry14]. **perspectives** [HS08b].
Perturbation [AM11, CC00, SME02, TLL15, CKP15].
perturbations [CGM10]. **perturbed** [Bog05, Bra06, BFR19, ELST18, EG06, GN14, KS06, KK08, LR16, Mar18]. **PET** [Bar11]. **phase** [AL09, LP17].
photosynthetic [SCCJC09]. **physical** [BFK⁺10]. **physiology** [PV09]. **Pick** [Ped07]. **pictures** [Sim06]. **Piecewise** [ER01, Kim07b, Bre04, HR06].
piecewise-constant [HR06]. **pinch** [BHRT03]. **pipe** [Kan08, Kan15, SK08].
pivoting [LS05, SG06]. **placement** [MX96, MX97]. **plane** [LM00]. **plasma** [JS18]. **plate** [SG94]. **plates** [SK06]. **Play** [CKH14]. **Plug** [CKH14]. **Plug-and-Play** [CKH14]. **plus** [ER14, Ng94, VVM09]. **PML** [Lis08]. **POD** [HHP13]. **Poincaré** [Bre04, LO13]. **point** [BL06, DDR95, GS06, GO10, HC06, JO08, KK08, Kou97, LO07, LN10, Mar18, NB08a, RV08, Sch93, SdS06, Sim10, SME02, Woh00, dJvdPDV17, vBHS14]. **points** [AK06, BCR98, BCDV06, BL08, EV93, GS16, JJ10, JO14, MS14, Rom07, SV10a].
Poisson [BB01, Bol08, Yam06b]. **polar** [Dub99, SSVS12]. **pole** [MX96, MX97, Van07]. **poles** [Van07].
Pollaczek [MMN18].
Pollaczek-Laguerre [MMN18]. **polygonal** [LMN10]. **polygons** [For02]. **Polynomial** [Mas02, MMN18, MW02, Opf15, Ran07, SEH14, BGP04, Bre04, BFH⁺15, CGM10, FMMS08, Fer05, FP01, Gre04, HMRS04, JR02, MYZ18, MFMGO05, MV15, Nar18, SV10a, TV18, TLF07, VB95, vBHS14].
Polynomials [Opf10, AM11, Arv06, AK06, BP07, Che06, Cot06, CBGV05, DJJ11, EV93, Faß96, FLMT05, GCPP99, GAM05, Gau99, Gau10, GM18, GN16, GRS00, HC05, IL06, JO14, JO17, Kei08, Koe99, Koe07, Kro06, KS18, KMFO05, Lor99, MS14, MM99, MY02, MF06, Ost10, Psa04, RÁRP06, Roz06, SL12, Sch02, SSS10, Sim06, Sta02, Sta06, VV18, VC15, WA08, Yat06, Zha01, dMPPR99].
porous [AMRT06, Tu05, Tu07]. **posed** [Kin11, NR14]. **positive** [ACR99, BFM12, CMP01, FSS18, LT05, ZB10]. **Positivity** [IN11]. **possible** [DTM17, Sch16].
posteriori [DGP99, Gat04, HJV18, LR16, NC06, PGH11]. **potential** [AR07, AMRT06].
power [HS12, KS18, Mál08]. **power-law** [HS12]. **power-law-like** [Mál08]. **powers** [Böt04, BFM12]. **practice** [MMP09].
precision [AD09, Lau08, ST02].
Preconditioned [GS15, Kny98, CR09, EN08, LY14, NZ14].
preconditioner [BPS17, CW96, CNP94, DHI03, GGM12, Kim07a, LN10, LH12, Mar11].
Preconditioners [BY99, DK13, GS06, AK10, BBD18, BJM99, BU07, BBMP06,

Bre03, CP00, CFM⁺10, Che99, CT03, CPS18, Dob12, ET09, GO10, GHS14, Han06, HC06, HLC10, KN03, LO07, MRT03, Meu01, Ng97, Pea15, QvGvW⁺15, SM08].

Preconditioning [CP03, HN08b, NB08a, SEH14, AVV14, Ber04, CMP01, HS02, Kim07b, Soo16, WR09, WSS98, Zha00].

prediction [Ful97]. **predictor** [AS12, PPN13]. **predictor-corrector** [PPN13]. **Preface** [Ano10a, Ano15a, Ano14a, Ano14b, Ano17a, Ano18a, Ano18b, GOR⁺08]. **premature** [LKF08]. **Preserving** [CKH14, BFS08, LC14, MX15, NU05].

pressure [CMM95, SK06, SK08]. **pricing** [KLS17, PPN13]. **primal** [BBK18, CW16, KCW18, SM08].

primal-dual [BBK18]. **primes** [Pri06].

principles [FKK10, Sel02]. **Prior** [DGH14].

Probability [BCDO18, BP07]. **Probing** [SdS06]. **Problem** [SEH14, AR07, Ade17, AL09, AVV14, AMRT06, AH10, BLM06, BdPNdP14, BMS08b, Bra06, BGS10, CMO18, CGM10, Che09, CPS18, CKP15, DG06, EG06, HP08, KL12, KM08, Mar07, Mar11, MX96, MX97, PMLFT09, Pri06, QvGvW⁺15, RR07, RS12, SV10b, TZ17, Vos03, WLR02, Yam06b, Zha04]. **Problems** [DGH14, AR09, AL08, AH03, Ash17, ADM07, AH04, BMFJ⁺06, BB01, BMX99, BFS08, Bir12, BY99, BRC⁺16, BRS08, BL06, Bog05, Bor09, BBKL15, BFR19, BK16, CRS94, CP00, CS94, DSSS13, ELST18, FKK10, FK08, FMR15a, GKM16, GS15, Göt06, GN14, GHS14, HJ08b, HS97, HHO14, HLNT18, HC06, KK08, KLS16, KJ09, Kin11, Kin13, KKR18, KN03, Kol12, KV13, KL18, KRZ16, Lam05, LV08, LO07, LN10, LMN10, LT14, LR16, Lis08, LMR15, Lub06, LR03, MR18, MM04, Mar18, MST08, Mav97, MW02, MS07, MP08, NR14, NZ14, NB08a, Ng94, NRS17, Oos03, PW13, Pea15, PSS99, RKvdDA14, SdS06, Sor98, TV07, TLL15, TMS97, Tos00, TW16, VK99, Wac13, WLHH18, WR09, Woh00, WSS98, ZM13, dJvdPDV17].

process [AHS17, BY98, Meu15]. **processes** [Raj08, Sch03]. **processors** [JC06, dJvdPDV17]. **producing** [Raj08].

product [ABH17, DO18, Drm15, LNG15, Ste97b, VB95]. **products** [BDR09, BEN94, BMSR06, GW10, GHS14, Mee98, Ste95, Ste97b]. **programming** [AM06]. **programs** [JO08]. **projected** [Dos08, HNP10, Sty08]. **projected-gradient** [Dos08]. **projecting** [AS05a]. **projection** [DJ06a, GNR15, JST05, KS00, Lam10, Lóp16, LRL08, MST08, Osb08, STO08].

projectors [She10]. **Proof** [Zei99].

propagation [HJ08a, PK08]. **properties** [EMS09, KM07, Mál08, MY02, Ram08, Rap06, SMS⁺19, Wei94]. **property** [Pop08].

proximal [FG17, Val19]. **pseudo** [Zho06]. **pseudo-multivariate** [Zho06].

Pseudospectral [Lui11, CQ01]. **pumps** [BKO17]. **pyramids** [GH99].

Q [Meu17]. **Q-OR** [Meu17]. **QR** [BGP04, BDG04, Kre05, MH01, OB05, Ste95, VVM08]. **QR-factorization** [VVM08]. **QR-factorization/solver** [VVM08]. **QR-like** [BGP04]. **Quadratic** [ČF18, BFS08, Dos08, Fat98, MS14, MV15, Sta02, Sta06]. **quadratically** [HMRS04].

Quadrature [Atk04, AS05b, GM06, RGVP99, ACR99, BCGAM08, CS14, DV12, DNV05, ER01, Gau99, Gau06, Ill03, JST18, MJ11, MJM16, MPS18, Ng97, Not16, PPS18, Roş09, Sin95, VV18, CDN09].

Quadrature-free [GM06]. **quadratures** [Che06, CBGV05]. **quadrilateral** [HK10]. **quadrilaterals** [HRV13]. **quality** [BSDMGFTR09]. **Quantum** [Arv06, Man08, Roz06]. **Quasi** [BBMP06, FFK⁺15, GM06, HK17, NR14, SHZF08, WLHH18]. **quasi-cyclic** [HK17]. **quasi-interpolation** [GM06]. **quasi-Lagrange** [WLHH18].

Quasi-Newton [BBMP06]. **Quasi-optimal** [FFK⁺15]. **quasi-residual** [SHZF08].
quasi-solutions [NR14]. **quasilinear** [MS07]. **quasiseparable** [EH15, VVM08].
quaternion [CS99, JO05]. **quaternionic** [JO07]. **quaternions** [Opf10]. **question** [She06]. **questions** [HS08b]. **quotient** [Fat98, Hen94, OS98]. **QZ** [MS06, Sor98].

radial [ÁNCQ06, GSV12, LW06]. **radiation** [Sta03]. **radii** [KQT13]. **radiosity** [ACS00, AC06, NND06]. **Ramanujan** [IL06, Sch06]. **Random** [SCCJC09, BP07, Els05]. **Randomized** [SGG15, EKPR19]. **range** [Psa04]. **rank** [BKK⁺18, BSS16, DS11, GO10, GM04, MS08, SGG15, SGB07, Sty08, WA08]. **rank-deficient** [SGG15]. **rank-one** [MS08]. **rates** [FFK⁺15, Ger17, Kin13, NR14, Neu16, RR10]. **Rational** [BB14, Bar06, Bor09, Gla08, GPT11, GK14, Ill03, MPV15, Pri96, RGVP99, SL12, Van07, VC14, Vos03]. **rationally** [FGV09]. **Raviart** [LMR15, YG96]. **Ray** [Pri96, BL97]. **Rayleigh** [Fat98, Hoc05, HP08, OS98]. **RCWA** [HS08b]. **reaction** [DE06, EG06, LR16]. **reaction-diffusion** [DE06, EG06]. **real** [BDD06, CBGV05, KM17, Mas02, MMN18, NPR08, TC08]. **Recovery** [AR14, Lam10]. **rectangles** [Hoh06]. **rectangular** [MC05, Pop08, SGB07]. **recurrence** [ÁNCQ06, CFÁN09, Koe07, LB96]. **recurrences** [GH94, Wei94]. **Recursive** [Nov05, Soo16]. **Recycling** [GS15]. **Reduced** [DS11, HOR08]. **Reducibility** [GS94]. **reduction** [Auz18, BB08, BFK⁺10, Cha11, FGV09, JOT08, PK08, Ran07, Wat06b]. **reduction-based** [BFK⁺10]. **reductions** [JO05]. **reference** [RT05]. **refined** [Hoc05, OR11, TC08]. **refinement** [BMM97, DDS⁺18]. **reflectors** [SS09]. **regimes** [BKS18]. **region** [Bar05]. **regions** [BSDMGFTR09, Hoc11, LP09, Leo06]. **regular** [ZB10]. **Regularization** [BL06, CKH14, Ram08, BD17, CLRS04, CNO08, DJ06a, GNR15, Ger17, Kin13, Neu16, RR10, RY09, RY15, VW97, Wac13, Wu03]. **regularized** [AVV14, LV08, LV14, WNK18, ZM13]. **regularizing** [DSC08, HJ08a]. **Reichel** [RS14]. **related** [FMMS08, Gau06, Göt06, JO17, LB96, Ped07, RR07, Roz06, TT05]. **relation** [GN16, KM96, ZY13]. **relations** [ÁNCQ06, CFÁN09, Mál08]. **relationship** [Soo17, VCL08]. **relativistic** [BKS18, GGCT09]. **relaxation** [ENH10, Gan04, GKM16, LM00, Pop08]. **remark** [Bar06]. **Remarks** [PP06, YG96, Zít08]. **Remez** [Yat06]. **Remez-type** [Yat06]. **Renyi** [BFdP⁺18]. **representation** [DFV09, DJ06b]. **represented** [ABH17]. **research** [Bra97, Not16]. **residual** [ABJE15, CR09, Gat04, LMSY14, SHZF08]. **residual-based** [Gat04]. **resolvent** [SG98]. **response** [TLL15, TZ17]. **restarted** [Bre16, CRS94, HRT08, Sch16, ZN17, Zít08]. **Restarting** [SS98, BR14, WE13]. **restoration** [Bar05, CCC07, NO02, ZM13]. **restricted** [OB05]. **restriction** [PP06]. **result** [KRZ16]. **resultant** [WA08]. **results** [BCDV06, BBKL15, EP07, GK08, Gre04, MN08, PQRT06]. **retards** [LR03]. **Retooling** [Dub01]. **revealing** [GM04]. **reversible** [Jac10, Tif13]. **revisited** [Arv06, LT14, LT18, Sad15, Sel02]. **Revisiting** [BdPNdP14, MV15]. **Reynolds** [Kan08, Kan15, Ste97a, TDLC09]. **Riccati** [ABM93, BMS08b, BMP09, EMS13, HJ09, LC14]. **Richardson** [MP08]. **Riemann** [MF06]. **right** [BK02, EJS03, JST05, LZ08b, MZLG14]. **right-hand** [BK02, EJS03, JST05, LZ08b, MZLG14]. **Ritz** [Bea98, DTM17, Hoc05, HP08, Meu15, PP08, ZN17]. **Rivlin** [MPS18]. **Robbins**

[Zei99]. **Robust** [GPT11, LR16, BZ03, BGP04, BHRT03, Dob12, GN14, HRT08, HK18, Jac10, Kol12, Pea15]. **robustness** [WE13]. **role** [Sch08a]. **root** [BGP04, Car11, Car12]. **root-finding** [BGP04]. **roots** [Gra16, JO07, MV15]. **rotated** [MC05]. **rotating** [STO08]. **rotation** [GK08]. **rotations** [OB05]. **Roundoff** [YNYF15]. **row** [AS05a]. **RQ** [Yan98]. **RQ-iteration** [Yan98]. **RRB** [dJvdPDV17]. **RRB-solver** [dJvdPDV17]. **rule** [DO18, Sch93]. **rules** [ACR99, Bar11, BCGAM08, DRST16, Gau06, JST18, Kin11, Kin13, LMM12, MJM16, Ng97]. **Runge** [AS14, Bir12, GS94, LT18]. **Rush** [PV09].

saddle [BL06, GS06, GO10, HC06, LO07, LN10, NB08a, SdS06, Sim10, Woh00]. **saddle-point** [BL06, SdS06]. **Saff** [She06]. **sampling** [Ash17, BP07]. **satisfying** [ČF18]. **Scalable** [JC06, MR18]. **scalar** [GHS14]. **scale** [ABJE15, ABHK09, BMS08b, BFS08, Cha11, HJ09, LV14, LR03, Sor98]. **scaled** [FG17]. **scales** [EP07]. **scattered** [GK08]. **scattering** [CL03, GSW08, HR14]. **scheduling** [BC05]. **scheme** [BPP15, Bra06, GGCT09, GN14, SSVS12]. **schemes** [AS09, AS12, ADW15, BC09, BEN94, CP00, HOR08, Mar18, MS07, WO97]. **Schmidt** [Bar15]. **Schrödinger** [BKS18, CQ01, GSV12, Kle08]. **Schur** [GH94, KLS16, Wat06b, Zha00]. **Schur-type** [GH94]. **Schwarz** [Bre03, Cal15, CPS18, CG18, DK10, DHI03, ELST18, EDG⁺15, FSS97, Gan08, Han06, HKKR18, HC06, LDB13a, LDB13b, LMR15, Mar07, MR18, MP08, Xu18]. **scientific** [BC05, BDR09, Bra97]. **second** [ABBS07, HHP13, LP08, Mok16, NNR99, NC06, Sch08b, TW16]. **second-order** [Sch08b, TW16]. **sections** [JN10]. **sector** [LZ08a]. **segmentation** [JC17]. **Seidel** [Sil03]. **selection** [BMS08b]. **Self** [BKS15, BFM12, EST06, GS15, GHS14, KK08]. **self-adjoint** [BFM12, GS15, GHS14, KK08]. **Self-generating** [BKS15]. **self-similar** [EST06]. **Semi** [ENH10, LC14, WR09]. **Semi-convergence** [ENH10]. **semi-iteration** [WR09]. **semi-stabilizing** [LC14]. **semiaxis** [Mas02, MMN18]. **Semicoarsening** [Den97]. **semiconductor** [SMS⁺19]. **semiiteration** [HH93]. **semilinear** [AH04, Bog05, DB08, Gan04, NB08b]. **seminorms** [BD17]. **semiseparable** [Kei08, QvGvW⁺15, VVM09]. **sense** [JST18, MS08]. **sensitivities** [SJ08]. **sensitivity** [BD04]. **Separable** [Os08, Bor09, SY09]. **separation** [Gra16]. **sequences** [Ber04, CP03, DJJ11, Pri96]. **sequentially** [QvGvW⁺15]. **series** [DT09, For02, GRS00, KS18, Ste02]. **set** [CKV04, DTM17, JST18, OB05, VCK08]. **sets** [AO10, AK06, FKS07, KV95, VK95]. **shallow** [DHI03]. **shape** [MH17]. **Sharp** [ZN17, Gau10]. **sharpness** [Var01, Yat06, VK95]. **shift** [BKS15, Mee98]. **shift-invert** [Mee98]. **shifted** [BDG04, EN08, SHZF08, Soo16]. **Shishkin** [ELST18]. **shocked** [HLC10]. **short** [ČF18, Wei94]. **sided** [JO14]. **sides** [BK02, EJS03, JST05, LZ08b, MZLG14]. **signal** [For02]. **Signorini** [BB01]. **similar** [EST06]. **Simple** [RY09]. **Simpler** [LZ08b]. **simplex** [Xu06]. **simplification** [LP08, LP17]. **simulation** [DDS⁺18, NW03]. **simulations** [BHRT03, Ema10, JS18, SMS⁺19]. **simultaneous** [VV18]. **sinc** [Hoh06, NND06, Yam06a, YG08, EG06, Yam06b]. **sinc-convolution** [NND06]. **single** [MX96]. **single-input** [MX96]. **Singular** [FKSV07, Atk04, BFK⁺10, Che94, FFK⁺15, GS06, Hen94, Hoh06, IN11, JO14, JR02, JR04, JKM14, LY14, MS14, Man06, MM04, MR93, OS15]. **singularities** [JKM14]. **singularity** [Ill03]. **singularly**

[Bog05, Bra06, BFR19, ELST18, EG06, GN14, KS06, KK08, LR16, Mar18].

singularly-perturbed [EG06]. **SIRT** [ENH10]. **sixtieth** [RS14]. **size** [LMM12]. **sized** [CG18]. **sizes** [Sch05]. **skew** [AM11, BMX99, BBF⁺00a, BBF⁺00b, BMX07]. **skew-Hamiltonian** [BMX99].

skew-symmetric [BBF⁺00a, BBF⁺00b, BMX07].

skew-symmetric/symmetric [BMX07].

slices [BLM06]. **Slit** [DK10, CMR12]. **slope** [Sch08b]. **small** [FL07, Leo06]. **smooth** [LW06, Mok15]. **smoothed** [BDH15].

smoother [Sil03, Ste97a]. **smoothers** [Bir12, LM00]. **smoothing** [BFH⁺15, GN16, HNS04, Mav97, Pop08, RY09, TV18].

Sobolev [Bre04, BMSR06, GCPP99, PQRT06, RÁRP06]. **Software** [Koe99].

solid [SV10b, Vos03]. **Solution** [Hoh06, NRS17, ABM93, AL09, AH04, AC06, BMX99, BMP09, Bol08, CR96, Che94, DG06, Die97, EHJM17, FKK10, FMR15b, GJV13, KN03, KL18, Nas15, Sta03, TMS97].

solutions [Aco06, BEG15, Cab07, DB08, FL07, HJ09, LC14, MYZ18, MFMGO05, Mok15, NB08b, NR14]. **solvability** [BKO17, MM09a]. **solver** [HRT08, Kol12, PLM03, VMV07, VVM08, dJvdPDV17].

solvers [BHRT03, BSS16, Gut12, PW13, Sta03].

Solving [BFS08, VMV07, ZM13, AM06, CCC07, CL03, CR09, EG06, EDG⁺15, GGCT09, HMRS04, KL12, LV08, Meu17, MS08, NND06, Ng94, Pea15, PV09, SHZF08].

Some [BB01, Gre04, She10, Zít08, AH04, BSS09, DDR95, DJ06b, FKK10, Gat04, MS14, NB08b, Rom07, Sch08b]. **sonic** [Dis97]. **SOR** [HS08a]. **sorted** [AO10].

source [BLM06, MM04, Neu16]. **Space** [BRS08, AS14, Bol08, GHS14, Gut12, HJV18, HKKR18, HLNT18, MVV09, PCP06, Sch03, WLHH18]. **space-time** [AS14, HJV18, HLNT18]. **spaced** [Roş09].

spaces [CMO18, HKKR18, KRR16, MS06, MR18, Mas02, PQRT06, RÁRP06]. **spacing** [VA09]. **Sparse** [AR14, BB08, BR08, BM05, Bun97, CFM⁺10, Che99, Erh95, GW10, LS05, PV05, PCP06, RT05, SG06, TMS97].

Sparsity [MH17, LMM12, Ram08, RR10, RZ12].

Sparsity-inducing [MH17]. **spatially** [JG14, LDB13a, LDB13b, Val19]. **Specht** [SG94]. **Special** [BJR⁺09, RS14, BK02, HK14, Koe99, KS18, GOR⁺08]. **SPECT** [Bar11]. **Spectral** [AR09, GGM12, Gut12, KLS16, AH10, Aur15, BK16, DHI03, HS08a, HJ16, Jac10, KV95, Lam05, Lam08a, Lam08b, Mee98, PPN13, Vos03]. **spectrum** [SF93]. **sphere** [AS05b, BP03, Fer05, GM06, Leo06, Leo09, TDLC09, Yat06]. **Spherical** [Roş09, FM02, SSVS12]. **spheroidal** [MACI06]. **spin** [KM07]. **spin-stabilized** [KM07]. **spline** [ČF18, KK08, Kha06, LR16].

splines [VC14, VC15, ZK17]. **splitting** [CGT05, JS18, ZB10]. **square** [Boc97, RY09, VCK08]. **squares** [Aco06, BMM97, BY99, Bor09, CMM95, CNP94, CL03, Faß96, GPT11, HJ16, KS00, LV08, LV14, MS08, Ng94, Osb08, Pav99, VB95, WNK18, ZM13]. **SR** [Faß07, SAA09].

Stability [BD04, CCDR08, GK08, KM07, Sch05, AS14, AD09, FH13, HK18, Kou97, MV15, Ste97b].

stabilizability [KQT13]. **Stabilization** [MST08, BL06, LRL08, Sch08a]. **stabilized** [KM07]. **stabilizing** [LC14, RV08]. **Stable** [MB06, APL04, AMVW15, Jac10, LRL08, PSC97, Tif11]. **stage** [BMPS95, CMP01].

Stagnation [Soo17, Meu12, Sim10].

staircase [BMX07]. **standard** [Bre03, CMO18, HLP10, KL18, SvdVM98, dMPPR99]. **standing** [BL97]. **state** [DN11, Per00]. **states** [FMSV08, Jac10, Tif11]. **stationary** [FMP96, LMS97, LP17, RV08]. **statistically** [Bar11]. **Steady** [DN11, CR09, Per00].

Steady-state [DN11, Per00]. **steepest** [AEEG08, NZ14]. **stencil** [dJvdPDV17].

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