

# Bibliography of the Book *Matrix Computations*

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## Abstract

This bibliography is from the book *Matrix Computations*, Second Edition, by Gene H. Golub and Charles F. Van Loan, The Johns Hopkins University Press, Baltimore, Maryland 21218, 1989.

The original bibliography was prepared by Charles Van Loan (Computer Science, Cornell University, Ithaca, NY 14853). It was corrected, edited, and put in BIB<sub>T</sub>E<sub>X</sub> format in September 1990 by Chris Paige and Clement Pellerin (Computer Science, McGill Univer-

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## Title word cross-reference

$(A - \lambda B)x = 0$  [Sch74].  $^{-1}$  [KW87].

$A$  [PW69, You72].

$A - \lambda B$  [Kåg85, Kåg86, TW70].

$A = 1 + H$  [Buc74].  $\{a_{ij}\}$  [Asp59].

$a_{ij} = 0$  [Asp59].

$AX + XB = C$  [BS72, GNL79].

$AX - XB^T = C$  [Bye84].

$ax = \lambda Bx$  [Erd67, GUW72, MW68c, PW69, PW70a, Rod73, Ste72, Ste75b].

$Ay = \lambda By$  [TW72].  $B$  [PW69].  $\ell$  [Hoc83].

$H$  [Buc74].  $ijk$  [OR88].  $j > i + p$  [Asp59].

$k$  [NV83].  $L_1$  [BCS78, BR73, CP76].

$L_2$  [GV74].  $L_\infty$  [BCC78].

$M$  [Bar87, MdV77].  $N$  [JH88].

$O(n^2)$  [Dor73].  $R^N$  [Bjö88].

$\sum f_p(A)Xg_p(A)$  [WZ72].  $\|A^{-1}\|$  [Var76].

- [OS81]. **-Cube** [JH88].

**-Matrix** [Bar87, MdV77]. **-Scaling** [GV74].

**-Solutions** [CP76]. **-step** [NV83].

**100** [LV75, NV75]. **10P** [DD88].

**2** [CDH84]. **200/VF** [DD88].

**3090** [DD88]. **3090-200** [DD88].

**3090-200/VF** [DD88].

**4** [DH86]. **400** [KL88].

**Accelerating** [Ste69]. **Acceleration** [YJ80].

**Accuracy** [Don83, DMW83, Hig88a, Pai80,

Rob77, Sco85, War77]. **Accurate** [DK88].

**ADI** [CmDP84]. **Adjoint** [GK69].

**Advances** [Wil77]. **after** [Ruh69b].

**Aid** [LO83].

**Algebra** [CDH84, DJK<sup>+</sup>88, DCHH88a, DGK84, DH86, DS86, FF63, FF77, Fox64,

GJM87, GJMS88, Gol74, Hag88, Hel78,

Hig85, Joh87a, Kah66, Kan66, Lau85,

LHKK79a, LHKK79b, Leo80, Mir55, ND77,

Str88, Wil77, WR71, DCDH88, DCHH88b].

**Algebraic** [AL84, Bye83, FM67, Nas75,

Rob77, Wil63, Wil65a, Wil68c, vdS70].

**Algebraically** [Cul78, CD74].

**Algorithm** [AC84, APP88, AL73, AL85,

AC76, Bai88a, BP75a, BR73, BS79, Bjö84,

BB71, BG84b, BG69, Bye86, Cha82a,

Cha82b, CD87, CP77, CVD88, Cra86, CD74,

CWL83, Cyb80, Cyb84, DT71, DCHH88a,

DE84, DS87a, Dub70, DMW68, Eld84,

Eld88, FH72, GJMS88, GPS76a, Gol74,

GUW72, Gra86, Gre81, HL69, Hel76, HP78,

Hua81, HV88a, HV88b, HVH87, JP71,

Kåg86, KR80a, KR80b, Kar74, Kau74,

Kau77, Ker82, LH69, LHKK79a, LPS87,

Loa75a, MPW70, MRW70, MW68b, MP82,

MS73b, ML82, Nan85, O'L80a, Paa71, Pai76,

Pai80, PD86, PS78, PS82a, PS82b, Par65,

Par66, Par68, Par80a, PR81, PS79, PSS82,

Ros69, Ruh69a, Saa82, SS86, Sco79b, SB79,

Sim84, Ste70, Ste76a, Ste79a, Ste85, Sto73,

Swa79, Swe74, Swe77, Tre64, War75, Wat73,

Wat82, Wil68b, Wil79, Win68, Zoh69].

**Algorithmic** [CdB80]. **Algorithms** [AL84,

BG76, BS86, Bis88b, BE73, BMRW68,

Bre70, Bud64, Bun87, Bye83, Cal86, CDH84,

CW77, CW85b, CW85a, Cyb78, DGKS76,

DGK84, DH86, DSS86, Doo83, DGR79,

EHHR88, Eld77a, FOH87, GR84, GPS76b,

Hea78, Hel78, Hig86b, Hig87b, JH87a, JH88,

KNP87, KNP88, KP74, Knu81, Kub61,

Lew77, Loa73, Mod88, MvdV87, O'L76,

OS85, Pai81, Par71, Pry85, Ris73, Ruh79,

Sam71, SHW86, Wil65b, Woz80].

**Allowing** [SS79].

**Almost** [Ruh75, Wed73a, Wil68a].

**Alternating** [CJZ83, JH87b].

**Alternative** [MC86]. **Among** [Par76].

**Analogue** [Fra61]. **Analyses** [Mei83].

**Analysis** [Abd71, APP88, AL85, Bel70,

Bjö87, Bre70, Bun71a, CdB80, Cyb78,

- Dem88, Eld77b, Elm86, FNO87, Gen73a, GL80, Gre52, HN81, Hig87b, Hig89, Hoa77, Hoc65, Hot57, Hou74, Huf87, IP87, JO74, KP74, Kie87, Loa83, MS78, MM83, NV83, Ort72, Pai73, Pai76, Pai79a, Par71, Ple86, Pry85, Sco78, Sim84, Sor85, Sun83, Var62, Wil61, Wil68c, Wil71, Woz80, dBP77].
- Analyst** [Dem83b]. **Angles** [BG73].
- Application** [ES86, FU69, JO71, Kau79, Loa77a, McC72, Ris73, Sch09, Ste80].
- Applications** [AG87, AG88, Bar87, BS68, Fox88, Fra64a, Fra64b, GLR86, GT81, HL69, Hig86a, Hig88d, Hig88e, LH69, Leo80, Loa73, Nas76, Opp78, RW72a, Str88, TG81, Van71, Var73].
- Applied** [Hag88, HY81, ND77, Ple86].
- Applying** [PR68]. **Approach** [CdB80, Doo81b, HV87, KP81, KM86a, McC72].
- Approaching** [DH86].
- Approximate** [AP86, KPJ82, OP64, Ste71].
- Approximating** [DGR79, Loa84].
- Approximation** [BR73, GHS88, Gre52, Loa77a, Saa86]. **Approximations** [FL70].
- Arbitrary** [HS88, Hua75, JH87a, Lot56, Ruh68, Sch79, Swe77].
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- Arising** [Saa86, Var72].
- Arithmetic** [Gre81, KM86b, Ste81a, Yoh79].
- Array** [BL86, KB84, Luk86b, Sch86].
- Arrays** [AC84, BL85, ES86, GK82, ST86, SHW86]. **Art** [IP87]. **Aspect** [Nic74].
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- Associated** [HVH87, Ste73b, SW80].
- Asymptotic** [Ste84a]. **aufzulösen** [Jac46].
- Augmented** [Cox81]. **Automatic** [KdV77].
- Average** [TS87]. **Axis** [EY39].
- Backward** [ADD88, dBP77].
- Balancing** [PR69, War81].
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- Banded** [DS84, Eld84, Joh85, WAC<sup>+</sup>88].
- Bandwidth** [Cut72, GPS76a, GPS76b].
- Based** [Cal86, CW80, HN81].
- Basic** [DCHH88a, Joh87a, LHKK79a, LHKK79b, Par68, DCDH88, DCHH88b].
- Bauer** [Rut69]. **be** [Bus68].
- Behavior** [Gre81, Ste84a].
- Best** [BB71, GV74].
- Between** [AR85, BG73].
- Bibliographical** [Ste76b].
- Bidiagonalization** [OS81, Pai74a, PS78].
- Biharmonic** [BD74]. **Bilineari** [Bel73].
- Binary** [Ste81a].
- Biorthogonalization** [Saa82].
- Bisection** [BMW67]. **Bisectors** [Par71].
- Björck** [Hig87b]. **Björck-Pereyra** [Hig87b].
- BLAS** [DD88, KL88]. **BLAS3** [GJM87].
- Block** [AP86, BS79, Bis87, Bun76, Cal86, CGM85, CD74, Dem83a, DHS87, ER88, FV62, Geo74, GLO81, GT81, GU77, Hel76, KB84, Mer85, Meu84, O'L80a, Ple86, Ris73, RW84a, RW84b, Saa80, SP87, Sco79a, SHW86, SS87, Swe77, TG81, Uhl73, Und75, Var72, Wat73]. **Block-Oriented** [Cal86].
- Block-Tridiagonal** [Var72].
- Boolean** [JH87a, JH87b, JH88].
- Both** [Mad59]. **Bound** [PNO85, Var75].
- Boundary** [FU69].
- Bounding** [Sco85, Var76].
- Bounds** [AK75, Boh75, Bro73, CR79, Des63, FL74, Hen62, Kåg77a, KPJ82, Lem73, OP64, Ruh70a, Ste71, Ste73b, Ste77b, Ste79c, SW80, Var68b, Wed72].
- Calculating** [BK77, GK65, Ste75c, Ste76a].
- Calculation** [BMW67, BS70, CGP76, GW69, KG83, LS78, MW67, PR69, PW71, Var68a].
- Calculations** [FF77, Fos86, JMP83, TW72].
- Calculus** [Dav73]. **Can** [Bus68, Pan84].
- Canonical** [Dem83b, Doo79, GW76, MW31, Par67, TA61, Uhl76, Wil78, Wil79].
- Case** [TS87, Wed73a]. **CDC** [LV75].
- CDC-STAR** [LV75]. **Certain** [All73, Buc77, HZ68, JO77, Ste73b, Var72].

**Chains** [Bar87, GM86]. **Changes** [SS79].  
**Characteristic** [Hou68, Lot56, Sch09].  
**Characterization** [GV74].  
**Characterizing** [Hoc83].  
**Chebyshev** [BP75a, GO88, GV61].  
**Cholesky** [BBDdH87, GH85, GHL86, HHP88, Hig89, Kie87, Man79, Mei83, ST86, Ste79a]. **Choosing** [GHW79].  
**Circle** [FV62, Sco85]. **Circulant** [Cha88].  
**Class** [Eis84, MP74, Ros69, Ser80, WG78, Wid78, Woz80]. **Classes** [Bud64].  
**Cline** [BCC78]. **Close** [Wil68a].  
**Closed** [Ste71]. **Closeness** [Ruh75].  
**Closest** [Pea01, Ruh87].  
**Clusters** [CD87, Kah67]. **Coarse** [Bis88b].  
**Codes** [Hig88d].  
**Coefficient** [Kog55, MdV77].  
**Coefficients** [OP64, Ste77c].  
**Collection** [DH84].  
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**Communication** [GR84, Joh87a, SS85a].  
**Compact** [Bun69]. **Comparison** [BG76, DR76, GPS76b, GWM76].  
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**Complement** [Cot74]. **Complete** [Kub61].  
**Complex** [AL73, AL76, BMPW66, BGG88, BG69, Ebe70, Ebe71, FH60, Fro65, Hig88d, KR80a, KR80b, MW68b, Mue66, Saa86, Sea69, Ser80, Var68a, Var68b].  
**Complexity** [GR84, Mil75].  
**Computation** [BLL85, Cha85, Cul78, CW79, Doo79, Eld85, FG86, Giv58, Gol69, GW76, Jen77b, JP71, Kåg77b, KR80a, KR80b, Mod88, Pai71, Par74a, Ruh79, Rut69, SP87, War77, WG78, Wra73, Wra75].  
**Computational** [FF63, Kan66, KF64, Mil75]. **Computations** [BR76, CL88, CW85b, CW85a, DHS87, FMM77, Gen73b, GL89, Joh87a, Lau81, Lau85, Luk78, Mol86, OS85, Pai79b, Ple86, Ric81, Rod82a, Rod82b, Ste73c]. **Compute** [GM86, ML78].  
**Computed** [Don83, DMW83].  
**Computer** [CMR88, FM67, FMM77, GL81a, KM86b, LV75, NV75, Pai79a, Sam71].  
**Computers** [DKH86, DS86, Hoc83, HJ88, KB84, Meu84, Meu89, OV85, PO87, Sch87].  
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**Condensed** [DHS87, DR75].  
**Condition** [AR85, Bro73, Bye84, CP77, CCL82, CMSW79, CR83, Dem83a, FL74, GL81b, Hag84, Hig87c, Hig88d, Lem73, Loa87, Loi69, O'L80b, Ric66b, Saa86, Smi67, Ste80, vdS69, vdS70, Hig86b].  
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**Conditions** [FM84].  
**Conference** [Hea86, KR83].  
**Configured** [JH87b, JH88].  
**Confluent** [BE73, GP71].  
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- Constraints** [Eld80, GU70, Mer85].  
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**Control** [DJK<sup>+</sup>88, DK88, Lau85, Loa82].  
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- E.** [Enr79]. **Eberlein** [Har82].  
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**Eigenvectors** [Bud64, CP77, CJ70, DK70, DMW83, GWDF88, Loa87, Pai71, PR69, PW71, Sco84, Ste69, Ste75c, Var68a].  
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**Element** [Geo73].  
**Elementary** [CdB80, Gou70, Wil84].  
**Elements** [Par76].  
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**Equality-Constrained** [Loa83].  
**Equation** [BS68, BS72, BD74, BDGG71, Bye83, Bye84, Cal86, CMdP84, DF76, DH84, Dor70, Dor73, Erd67, Hoc65, KNP87, KNP88, KW87, Sto75a, Sto75b, SS73, WZ72].  
**Equations** [AL84, Axe77, Axe80, Axe85, BG76, BP75a, Bau65, Bjö87, Bjö88, BP70, BMPW66, Bun85, BP71, BGN70, Cli76a, CG73, CGO76, Cox81, Cyb80, DNT83, DS83, Doo81b, DR76, ED83, Joh84, Kog55, Lan70, MP74, MPW66, MW67, MdV77, Meu89, Nan85, OP64, OV85, Pai73, Pai74a, PS75, PS78, PS82a, PS82b, Par80a, PR70, PW79, Rei67, Rei71b, Rei72, Rob77, RO88, Ros69, Sch09, She55, Smi70, Ste73a, Ste81b, Sto73, Swa79, Var61, Var72, Vet75, Wid78, Wil78, dV77]. **Equilibration** [Bun71b, McK62, Ske81, vdS69, vdS70].  
**Equivalence** [CW77, Dem83a, Rin55].  
**Ergodic** [Bar87].  
**Error** [Abd71, ADD88, AL85, Bre70, Cyb78, Gen73a, Hig87b, JO74, Kie87, Lev47, Mad59, Mei83, OP64, Pai73, Pai76, PNO85, Pry84, Pry85, Rob77, Ste71, Ste73b, Ste79a, SW80, Wil61, Wil68c, Wil71, Woz80, dBP77].  
**Errors** [Boh75, Coc68, HV87, HS66, LS78, Ste77c, Wil63]. **Estimate** [BB71, CMSW79, HZ68, War77, GM86]. **Estimates** [Dem87d, Gau75a, Hag84, Kan66, Rob77].

- Estimating** [Hig88d, Loa87, O'L80b, PSS82].  
**Estimation** [GL81b, Hig87c, Hig88d, Huf87].  
**Estimator** [Bye84, CCL82].  
**Estimators** [CR83, GWM76, Ste80, KW87].  
**ETA** [DD88]. **ETA-10P** [DD88].  
**Euclidean** [Blu78]. **Evaluate** [PS73].  
**Evaluation** [CJ70, Loa78b]. **Even** [Joh84].  
**Exact** [All73]. **examples** [CR83].  
**EXCHNG** [Ste76a].  
**Exclusion** [BF60a, BF60b].  
**Execution** [AC84].  
**Existence** [Cha85, FM84, TW72].  
**Expansion** [Ste84d].  
**Experiences** [CDH84, KL88].  
**Experiments** [PT57, Ric66a].  
**Explicit** [Dav73, Lan70].  
**Exploratory** [Hoa77]. **Exponential** [FL70, Kåg77a, Loa75b, Loa77a, Loa77b, Loa78a, ML78, War77, Wra73, Wra75].  
**Extended** [DCHH88a, DCHH88b].  
**Extension** [GBDM72].  
**Extensions** [HL69, LH69]. **Extra** [Bai88b].  
**Extremal** [AM65]. **Extreme** [Ste75a].
- F.L** [Rut69]. **FACR** [Hoc83].  
**Factor** [Gre52, Hot57].  
**Factoring** [Ris73, Ser80].  
**Factorization** [AP86, Bis88b, BBDdH87, BBdH86, DGKS76, DD88, DSS86, Elm86, ER74, GH85, GH86, GHL86, GM76, GM86, HS86, Kie87, Luk86a, Man79, Mei83, Mer85, OS86, OR88, PJV87, SS79, ST86, Ste77b, Ste79a]. **Factorizations** [Cha85, Cha87, CJZ83, GGMS74]. **Factorized** [Gol76].  
**Factorizing** [Fle76].  
**Factors** [GMS75, HH89]. **Far** [KP76].  
**Fast** [CG73, Hig88c, HS88, Hoc65, MP74, Pai79b, Rat82]. **Few** [Cul78, Sco84].  
**Fields** [Hen62]. **Filter** [Lev47].  
**Find** [Blu78, Cra86].  
**Finding** [Bud64, CM83, GWDF88, Van71].  
**Finite** [Geo73, Gre81, Hal58, Tre64, Var72].  
**Finite-Difference** [Var72]. **First** [Hea86].  
**Fit** [Pea01]. **Fitting** [Dur60, Mad59].
- Floating** [Mol67, Ste81a].  
**Flow** [FG86, OS85]. **Form** [Aas71, Bus69, Cup83, Dem83b, Doo79, Giv58, GW76, KR80a, KR80b, MW68c, MW68d, MW31, Uhl76, Wat73, Wil78, Wil79, DHS87].  
**Forms** [DR75, GU70, OR88].  
**Formulation** [FNO87]. **Fortran** [Blu78, DCHH88a, DCHH88b, DE84, DH79, Hig88d, KW87, LHKK79a, LHKK79b, Ste76a].  
**Found** [Ruh87]. **Fourier** [Hoc65].  
**Frequency** [Lau81]. **Fully** [DS87a].  
**Function** [Eld85, Rin55].  
**Functional** [Dav73].  
**Functions** [BCS78, Des63, Fra64a, Fra64b, Kåg77b, Mir60, Par74a, Par76, PT57].  
**Funzioni** [Bel73].
- Game** [TW72]. **Gauge** [Mir60].  
**Gauss** [BR70, GW69, KP81].  
**Gauss-Jordan** [BR70].  
**Gauss-Markov** [KP81].  
**Gaussian** [Boh75, Bro73, Bus71a, Coh74, CMR88, Cry68, DK77, DP88, HH89, Rei71a, Ske79, Ske80, Sor85, Str69, TS87].  
**General** [Bjö84, FJL+88, Giv58, Kåg85, KP81, Loa75a, MW68d, McC72, Pai85, Ruh69a, Swa79, Var68a, Var68b, Var70a].  
**Generalization** [GHS88, Gou70, Ruh68, You72].  
**Generalizations** [BV68, FV62, Par74b].  
**Generalized** [AL84, BG84b, CGO76, Cra73, Cra76, JT87, Doo81a, Doo81b, Eld83, Eld85, ES82, ER80, FH72, FNP82, GHW79, JY83, JO77, Kåg85, KW87, KdV77, Kau74, Kau77, Kau87, KF64, Loa73, Loa83, Loa85a, MS73b, Nas76, Pai79a, Pai79b, Pai85, Pai86, PS81, PW70a, SS86, Sch66, Ste75b, Ste76b, Ste78, Ste79c, Ste83, Sun83, Swe74, Van71, War81, YJ80, dV77, dV82a].  
**Generalizing** [CCL82, Loa76].  
**Generate** [Uhl76].  
**Generation** [AOU87, Ste80].  
**Geometric** [PP73]. **Geometrical** [Nic74].  
**Geometry** [AM65]. **Gershgorin** [FV62,

- Joh71, Sco85, Ste75b, Var70b].  
**Gigaflop** [DH86]. **Given** [OP64].  
**Givens** [Duf74, Gen73a, Gen73b, GH80, Ham74, MC86, Rat82].  
**Gleichungen** [Jac46].  
**Global** [Har82, HP78, Par68, Wil68b].  
**GMRES** [SS86, Wal88]. **Go** [KP76].  
**Good** [GHW79]. **Gradient** [Ada85, Ash87, AMS88, Axe80, Cli76b, CGM85, CGO76, CW77, CW80, Eis84, FM84, Gin71, Gre81, JY83, Jen77a, JMP83, Jor84, Mel87, Meu84, O'L76, O'L80a, Rod73, Sea86, Woz80, YJ80].  
**Gradients** [HS52, Rei71b, Rei72, RW72b, Ste75a, vdSdV86]. **Grain** [Bis88b].  
**Gram** [Abd71, Bjö67b, DGKS76, Ric66a, Ruh83, Saa86]. **Gram-Schmidt** [Abd71, Bjö67b, DGKS76, Ric66a, Ruh83].  
**Grands** [GM83]. **Granularity** [CDH84].  
**Group** [GM86]. **Growth** [DP88, HH89].  
**GSV** [Pai84]. **GSYLV** [KW87].  
**GSYLV-** [KW87]. **Guang** [Pai84].  
**Guide** [DBMS78, GBDM72, Mol80, MLB87, SBI+70].
- Hamiltonian** [Bye83, Bye86, Loa84, PL81].  
**Hand** [OP64, Saa87].  
**Handbook** [BE68, CL88, AL76].  
**Hankel** [Phi71, Ris73]. **having** [Cox81].  
**Havsbad** [KR83]. **HEP** [DH84, LO83].  
**Hermite** [GP71].  
**Hermitian** [AG87, AG88, BBI71, CM83, DT71, EY39, Gou70, Hen58, Kah67, Kah75, Mah79, Mue66, Pai74b, Sch79, Ste69, Ste76d].  
**Hessenberg** [Bus69, Bus71b, GNL79, Gra86, Ike79, Loa82, MPW70, MW68b, MW68d, Par67, Par68, Ste76a].  
**Hessenberg-Schur** [GNL79].  
**Hestenes** [Han88].  
**Hierarchical** [GJM87, GJMS88].  
**High** [Bai88b, DKH86, DS86].  
**Higher** [Var61]. **Higher-Order** [Var61].  
**Householder** [BL87, BG67, BG65, CM88, Cup84, HL69, Kau79, Kau87, LH69, MW68a, Mue66, PR68, Rei67, SL89, Tsa75, Wal88].
- HQR3** [Ste76a]. **Hybrid** [O'L76].  
**Hyperbolic** [APP88, DI86].  
**Hypercube** [Bis87, Dav86, Ebe87, FOH87, GH85, GH86, GWDF88, Hea86, Hea87, HHP88, Joh87a, KNP87, MvdV87].  
**Hypercubes** [SS85a, SS85b, WAC+88].  
**Hypermatrix** [NV75].
- IBM** [DD88, KL88].  
**ICCG** [Ker82, PO87, dV82b].  
**Identity** [Bre70]. **II** [Bjö68, BPS86b, Fra61, Fra64a, GV61, Hou68, MS78, OR88, Wra75].  
**III** [DK70]. **III** [Dem87b, DK88, Eld77a, Eld84, Eld85, ES86, FH72, GW76, OS81, PW79, Ruh70b, Var73, Wil72].  
**Ill-Conditioned** [Eld77a, Eld84, Eld85, FH72, GW76, PW79, Ruh70b, Var73, Wil72].  
**III-**  
**Posed** [Dem87b, DK88, ES86, OS81, Var73].  
**ILLIAC** [Luk80]. **Impact** [GJMS88, GR84].  
**Implementation** [CVD88, DCHH88a, DSS86, Eis84, KL88, LO83, Mel87, MP85, Ruh79, Wal88].  
**Implementations** [MvdV87].  
**Implementing** [DGK84, DH86, Tsa75].  
**Implicit** [Dub70, DMW68, Ste81b, Var61].  
**Implies** [JW77, Ske80].  
**Improved** [BR73, Cha82a, Cha82b].  
**Improving** [Don83, DMW83].  
**Inaccurate** [CR79]. **Inclusion** [Kah67].  
**Incomplete** [CJZ83, Elm86, Man79, RW84a, RW84b]. **Inconsistent** [Axe80].  
**Incorporating** [Ste70]. **Indefinite** [AG87, AG88, BG76, BP71, Fle76, PS75, Saa84].  
**Independent** [Ste77c].  
**Inequalities** [MM64]. **Inertia** [BK77].  
**Inexact** [GO88]. **Influence** [Jen77a].  
**Inner** [Win68].  
**Integral** [JP71, Lan50, Sch09, Smi70].  
**Integrals** [Loa78a]. **Interchanges** [Fos86].  
**Intermediate** [SLN75].  
**Interpretation** [CW80].  
**Interpreting** [Jor87]. **Interval** [Yoh79].  
**Intervals** [CW79]. **Introduction** [Bel70,



- Fox64, GK69, Lue73, Mir55, Ste73c, TA61].  
**Invariance** [Ste84b].  
**Invariant** [Dem87d, GLR86, MP82, Mir60, Par66, Ruh70a, Ste71, Ste76d, Var70a].  
**Inverse** [Asp59, BG78, DGR79, Fri75, Fri77, FNO87, GK65, PW71, PW79, RW72b, Var68a]. **Inverses** [All73, Gau75a, GP73, GP76, Hen62, Ike79, Nas76, PW70b, Ste77a, Wed73b]. **Inversion** [BR70, GM86, Tre64, Tre74, Wat73, Wil61, Zoh69].  
**Involving** [Hig88c, Loa78a].  
**Irregular** [BD74, BDGG71].  
**Isolated** [Ste75a]. **Iterates** [Hen62].  
**Iteration** [CJ70, CJ71, JO71, JS75, Lan50, Man77, McK62, Par74b, PW71, PW79, RW72b, Rut69, Rut70, Ste69, Ste75c, Ste76d, Var68a]. **Iterations** [Arn51, PP73].  
**Iterative** [Axe77, Axe85, BI75, BNP88, BS70, Bjö67a, Bjö68, BB71, BG67, Bun69, DGR79, Eva84, GO88, GV61, GW66, HY81, JW77, MPW66, McC72, MdV77, Mol67, NV83, Ple86, Ske80, Und75, Var62, Wac66, You71, YJ80, EN83]. **IV** [Fra64b, Luk80].
- J** [Pai84]. **J.-Guang** [Pai84]. **Jacobi** [AL76, AR85, BS86, Bis87, BG78, BG84a, BE68, BP75b, Ebe70, Ebe87, FH60, GH84, Han62, Han63, Hen58, HZ68, Hua75, KG83, Loi72, MP85, PT57, Ruh67, Ruh68, Rut66, Sam71, Sch64, SHW86, Sea69, SS87, Ste85, vK66].  
**Jacobi-Like** [Sam71, Ste85].  
**Jacobi-Type** [AL76, BE68, Ebe70, Hua75].  
**JNF** [KR80a]. **Jordan** [BR70, Dem83b, GW76, KR80a, KR80b, Loi69].
- Kogbetliantz** [Bai88a, CD87, CVD88, PD86].  
**Kronecker** [Doo79, Kåg86, Wil78, Wil79].  
**Krylov** [Saa81, Saa84].
- Lanczos** [CGP76, CD74, CW77, CW79, CW80, CW85b, CW85a, CWL83, ER80, Gol74, GLO81, GU77, GUW72, KP74, KP76, KdV77, Pai70, Pai76, Pai80, Par80a, PR81, PS79, PSS82, Ruh79, Saa80, Saa82, Saa87, Sco78, Sco79a, Sco79b, Sim84, Und75, Wid78, dV82a].  
**Large** [BPS81, Cul78, CD74, CW79, CW85b, CW85a, CW86, CWL83, Enr79, ER80, GL81a, GM76, HH89, Jen72, OS81, Pai71, PR81, Rei71b, Ruh74, Ruh79, Saa81, Saa82, Ste74, Ste76b, Und75, Van71, You71].  
**Large-Scale** [BPS81].  
**Largest** [Cul78, CD74, PSS82].  
**Latent** [GWM76]. **Lattice** [Cyb84].  
**LDV** [GMS75].  
**Least** [Abd71, APP88, AK75, BNP88, Bau65, Bjö67a, Bjö67b, Bjö68, Bjö84, BG67, BG65, Cli73, Cox81, Cyb84, Eld77a, Eld77b, Eld80, Eld83, Eld84, Eld85, Gan81, Gen73b, GH80, Gol65, GKS76, GL80, GP73, GP76, GR70, GW66, GWM76, HL69, Huf87, Huf88, HV87, HV88a, HV88b, JO74, Kar74, KP81, LH69, LH74, Lin61, Loa83, Loa85c, Pai79a, Pai79b, PS78, PS82a, PS82b, PW70b, Ple74, PR68, Rei67, Saa86, SS79, Ste77a, Ste87, Wed73a, vdS75b, Dem87c]. **leichtes** [Jac46].  
**Level** [DD88, DCDH88, KL88].  
**Level-3** [DD88]. **Levinson** [Cyb80].  
**Levinson-Durbin** [Cyb80].  
**Like** [Sam71, Ste85, Hig88c].  
**Limitation** [Loa77a]. **Linéaires** [GM83].  
**Linear** [Abd71, AM65, ADD88, AC76, Axe77, Axe85, BCC78, BCS78, BG76, BP75a, BR73, Bau65, Bjö67a, Bjö67b, Bjö68, Bjö84, BG67, BG73, BMPW66, Buc77, Bun76, BK77, BP71, BG65, Cal86, CDH84, Cli73, CP76, Cox81, Cra86, Cyb84, DJK<sup>+</sup>88, DCHH88a, DGK84, DH84, DH86, DS86, Doo81a, DR76, DS58, Eld80, ES86, Enr79, FF63, FF77, FM67, Fox64, GJM87, GJMS88, Geo74, GH80, GK69, Gol65, Gol74, GL79, GO88, GU70, Hag88, HL69, Hel76, Hel78, HS52, Hig85, Joh87a, Kah66, Kan66, Kar74, Kat66, Ker82, Kog55, KP81, LV75, Lan50, Lan70, Lau85, LH69, LHKK79a, LHKK79b, Leo80, Lue73, Mah79, Mak75, MP74, Man77, MG76, MdV77, MP82, Mir55, NV83, ND77,

OP64, Pai74a, Pai79b, Pai85, PS75, PS78, PS82a, PS82b, Par80a, PR70, Ple74, PR68, Rei67, Rei71b, Rei72, Rob77, Ros69, Saa81, Saa84, SS86, SK78, Sch09, SS79, Ste71, Ste73a, Ste77a, Ste77c, Ste81b, Sto73, Str88, Var73, Vet75, WAC<sup>+</sup>88, Wid78, Wil77, Wil78, WR71, You71, dBP77, vdS70, vdS75b, DCDH88, DCHH88b].

**Lines** [Mad59, Pea01].

**LINPACK** [CCL82, DBMS78, Bye84].

**Linpack-Style** [Bye84]. **Local** [Cal86].

**Local-Memory-Based** [Cal86].

**Logarithms** [Hel68]. **Look** [Par80a].

**Loops** [DH79]. **Low** [AG87, AG88].

**Lower** [Var75]. **Lowers** [Wat88, Dem87c].

**Lowest** [BS70].

**LR** [Fra61, MW68b, Wil65b].

**LSQR** [PS82a, PS82b]. **LU** [Cha85, Dav86, DD88, Elm86, PP73, WAC<sup>+</sup>88].

**Lyapunov** [BS68, BN87]. **LZ** [Kau74].

**m** [Ada85]. **m-step** [Ada85].

**Machine** [DGK84, Var68b].

**Macros** [LO83]. **Make** [Sco79b].

**Manifestations** [Cot74].

**Markov** [Bar87, GM86, KP81, SS76].

**Mathematical** [FMM77, Hoa77, Ric81].

**MATLAB** [Mol80, MLB87].

**Matrices** [All73, AL76, AOU87, AG87, AG88, AR85, AC76, Asp59, AP86, Bau63, BR68, BR70, BBI71, BL87, BBdH86, BG78, BG84a, BMRW68, Buc74, Bud64, Bun71b, Bun74, Bun82, BGG88, Bus68, Bus71b, Cra86, CM83, CD74, CW79, CWL83, Cup84, Cut72, DT71, Des63, DGK84, DHS87, Dub70, Duf74, DER86, DR75, Ebe65, Ebe71, EY39, FV62, FL74, FU69, Fle76, Fou84, Fri75, Fro65, FNP82, Gan59a, Gan59b, Gau75a, Gau75b, GWDF88, GLR86, GH59, Gou70, Gra86, GH84, GL81b, Har82, HLPW86, Hel68, Hen58, Hen62, Hig87c, Hou74, Hua81, Ike79, JO77, JS75, Joh71, JH87a, Kah67, Kah75, KP74, KPJ82, Kau87, KG83, LT85, Lem73, Loi69, Loi72, Lot56, Mah79, MPW70,

MRW70, MW65, MW67, MW68b, MS73a, Mue66, MW31, Nic74, Osb60, Paa71, Pai71, Pai74a, Pai74b, PL81, Par66, Par67, Par68, Par74a, Par74b, Par76, Phi71, PT57, RB68, Ris73, RW72a, Ruh67, Ruh68, Ruh74, Ruh75, Ruh79, Rut66, Rut70, Saa86, SLN75, Sch79, Sea69, Ser80, Ste70, Ste75c, Ste76d, Ste80, Tre64, Tre74, TA61, Uhl73, Uhl76, Van71, Var70b, Var79, WAC<sup>+</sup>88, WG78, Wat73, Wil68a, Wil72, Wil84, vdS69, vdS75a].

**Matrix** [Aas71, AK75, AL73, Arn51, Bai88b, Bar87, BI75, BMW67, BS68, Bel70, BS70, BB71, BH83, BPS81, BG78, Bre70, BKP76, BR76, Bus69, BG69, CP77, CS87, CJ70, CMSW79, CL88, CMR86, Cul78, CL86, Dem83a, DK87, DSS86, DGR79, Duf77, DS78, ER88, Erd67, ER74, FH60, Fos86, FOH87, Fra64a, Fra64b, FG86, GBDM72, GH86, GK82, GPS76a, GGMS74, GM76, GMS75, Giv58, Gol69, Gol73, GK65, GL89, GLO81, GNL79, GT81, GV74, HS86, Hig86c, Hig87a, Hig88b, Hig88d, Hig88e, Hig89, HS88, Hou58, Hua75, HVH87, Jen77b, Joh86, JH88, JP71, Kåg77a, Kåg77b, KR80a, KR80b, KR83, Kau79, Kau83, Kog55, KM86a, Lan70, Lew77, Loa75a, Loa75b, Loa77a, Loa77b, Loa78a, Loa78b, Loa84, Loa85b, Luk78, MRK76, MM64, MPW65, MW68a, MW68d, MdV77, Mod88, Mol86, ML78, MS73b, O'L80b, OS85, OS86, Ort88, Pai73, Pai76, Pan84, PR69, PR70, Pry85, Ric81, Rin55, Ris73, Rod73, Ruh69a, Ruh69b, Ruh70b, Ruh78, Ruh87, Sch68, Sco84, Sco85, SB79, Smi67, SBI<sup>+</sup>70, Ste69, Ste73c, Ste76a, Ste77b, Ste85, Sun82, TG81, TW72, Var62, Var68a, Var68b, Var70a, Var75, Vet75, War77, Wat88, Wil61, WZ72, Wra73, Wra75, Zoh69, Hig86b].

**Max** [Bun71b]. **Max-Norm** [Bun71b].

**Maximizing** [PT57]. **Means** [Ruh70a].

**Measure** [Pry84]. **Measurement** [Coc68].

**Measurements** [HN81, Jor87].

**Measures** [Ebe65]. **Mechanics** [BW73].

**Memory** [Cal86, EHHR88, GJM87, GJMS88, GHL86, HR88, JH87a, KNP88,

- LC88, Mol86, PJV87].
- Mesh** [BLL85, Geo73]. **Method** [Abd71, AL76, AR85, Bar71, BCC78, BMW67, Bis87, Bjö87, BH83, BG84a, BE68, Bun71a, Cli73, Cli76a, CGP76, CJ71, CGM85, CGO76, Cup81, DF76, Ebe70, Ebe87, ER80, FM84, FH60, Gin71, GHW79, GLO81, GNL79, GU77, Gup72, Han87, Han88, Har82, HS86, Hig86c, Hua75, Jen77a, JO71, KW87, Lan50, Lin61, Loa84, Loa85c, Loi72, Luk86a, MP74, MdV77, Meu84, MP85, Mue66, Nas75, Pai73, PJ84, PW79, PT57, PR68, Rei71b, Rod73, Ruh67, Ruh68, RW72b, Rut66, Rut69, Rut70, Saa87, Sch74, SS79, Sea69, Ste75a, Ste83, Und75, Wal88, Wid78, vK66].
- Methods** [Ada85, Ash87, AMS88, Axe77, Axe80, Axe85, AP86, BNP88, BW73, BR70, BV68, BG73, BP75b, Bun76, Bun85, BK77, BP71, BGN70, Cli76b, CG73, Dem87d, DS83, DER86, DR76, EN83, Eis84, Eld77b, Eva84, FF63, FMM77, FNO87, GGMS74, GMS75, Gol65, Gol76, GO88, GV61, HY81, Han62, Han63, Hen58, Hes80, HS52, Hot57, JY83, JH87b, KMN88, Kau83, KF64, Loa83, McC72, Mel87, Meu89, NV83, O'L80a, OR88, PO87, Ruh74, Saa80, Saa81, Saa82, Saa84, SS87, Sim84, Ste73a, Ste75c, Van71, Var61, Wil61, You70, YJ80, dV82b].
- Metric** [Gol76]. **MGs** [Ple74].
- MIMD** [CMR88]. **Minimal** [SS86, Var70b].
- Minimization** [BCS78].
- Minimized** [Arn51]. **Minimum** [CL86].
- Mirsky** [GHS88]. **Missized** [FG86].
- Model** [DCHH88a, KP81, Pai85].
- Modelling** [AC84].
- Models** [Dur60, HS66, SS76].
- Modern** [Wil71]. **Modes** [CGP76].
- Modification** [AGG88, BNS78].
- Modifications** [Ham74]. **Modified** [BG84a, EHHR88, Gol73, MW68b, Sea69].
- Modifying** [GGMS74, GMS75].
- Moments** [Hou68].
- Monitoring** [Bus71a, ER74, KdV77].
- Monitors** [LO83]. **Most** [DE84, DKH86].
- MP** [CDH84, DH86, Sea86].
- Multicolor** [PO87].
- Multidimensional** [GP70].
- Multiple** [JH87b, Wil68a].
- Multiplication** [Bai88b, Bre70, CS87, FOH87, MRK76, Pan84].
- Multiplications** [PS73].
- Multiplicative** [Fri75, Pry85].
- Multiplying** [JH87a].
- Multiprocessing** [CDH84].
- Multiprocessor** [BS86, BL85, Dav86, GH85, GWDF88, GHL86, KNP87, LC88, LPS87, PJ84, PJV87]. **Multiprocessors** [EHHR88, Hea86, Hea87, HR88, Joh87a, JH87b, Mol86].
- Multitasking** [DH86].
- Multivariable** [Lau81].
- Multivariate** [Ham85, Hot57].
- Narrow** [Joh85]. **Near** [Loa85b].
- Nearest** [Dem87b, Hig88b].
- Nearly** [Cha84, Kah75, Ste81b].
- Nearness** [Hig85, Hig88e].
- Necessary** [FM84, PS73].
- Neighboring** [Wil84]. **Nested** [Geo73].
- Networks** [HI83]. **Newer** [Hot57].
- Newton** [BR68, Hig86c, PW79, RB68].
- Nineteen** [ML78]. **Non** [BS70, Bun69, Ebe65, EY39, GK69, Hen62, Ste76d].
- Non-Hermitian** [EY39, Ste76d].
- Non-Iterative** [Bun69].
- Non-Normal** [Hen62].
- Non-normality** [Ebe65].
- Non-Self-Adjoint** [GK69].
- Non-Symmetric** [BS70].
- Nongeneric** [Huf88].
- Nonhermitian** [Ste85].
- Nonlinear** [DS83, GP73, GP76, Lue73].
- Nonlinearly** [Hea78].
- Nonnormal** [KPJ82, Par74b, vdS75a].
- Nonnormality** [Loi69]. **Nonscalar** [PS73].
- Nonseparable** [CG73].
- Nonsingular** [Uhl76].
- Nonsymmetric** [Hou58, Man77, Saa84, SS86, Wid78].

- Nonsymmetrizable** [JY83, YJ80].  
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**Normal** [CGP76, GH59, Hen62, Hua81, KR80a, KR80b, Loi72, Ruh67, Ruh75, Ruh87]. **normality** [Ebe65].  
**Norms** [BF60a, BF60b, HZ68, Mir60].  
**Notations** [AS83].  
**Note** [Bai88a, BBI71, BBDdH87, Buc74, Bun82, Coh74, Dub70, Eld85, GW66, Ham74, Kie87, Loa78b, Pai84, Rei67, Rei71a, Ruh78, Ste79b, Sun82, Tsa75, Wil72].  
**Null** [Fos86, Ste84b].  
**Number** [Bro73, CMSW79, CR83, Dem83a, GL81b, Han88, Hig87c, PS73, Saa86, Hig86b].  
**Numbers** [AR85, CP77, FL74, Lem73, Loi69, O'L80b, Smi67, vdS69].  
**Numerical** [BG73, Bun87, Bus71a, CdB80, CG73, CGO76, Cyb80, Cyb84, Dem83b, Dem84, Dem88, DS83, Eld77b, Enr79, ER80, Fox64, FNO87, GP70, GR84, Gol65, Gol74, Hag88, Hea78, Hel78, Hig85, Hou74, IP87, JW77, Kåg77b, KR80a, KR80b, Kah66, KMN88, Lau85, Mil75, Ort72, Pai81, Ruh69a, Ruh83, She55, Ske79, Ske80, Ste74, Var73, War77, Wil77, dV77].  
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**Numérique** [GM83]. **numerisch** [Jac46].  
**O.** [Enr79]. **Oblique** [Gre52, Saa82].  
**Observation** [Lin61].  
**observations** [Cli76b]. **Oceans** [CGP76].  
**Odd** [Joh84]. **Odd-Even** [Joh84].  
**One** [BNS78, Hig88d, McC72, Nas75].  
**One-Norm** [Hig88d]. **One-Sided** [Nas75].  
**One-Step** [McC72].  
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**Operator** [BN87, FL70]. **Operators** [DS58, GK69, HZ68, Kat66, Lan50, Ste71].  
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**Optimale** [Leh63].  
**Optimally** [Bau63, Bus68, FL74, Gau75b].  
**Optimization** [CW80, DS83, Gol76, Hea78, Hes80]. **Optimizing** [Hoc83].  
**Order** [GV61, Ste84d, Var61].  
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**Origin** [Hua81, Ste70, Wil68b].  
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**Orthogonalization** [BI75, Bjö67b, PS79, Ric66a, Ruh83].  
**Other** [GP76, Saa82, LO83].  
**Over-Determined** [DR76]. **Over-Relaxation** [BV68, GV61, PJ84, You70].  
**Overdetermined** [BCC78, BCS78, BP75a, Cli76a, Cox81].  
**Package** [Yoh79]. **Padé** [FL70, Loa77a].  
**Pair** [Uhl76]. **Pairs** [Sun82].  
**Pairwise** [Sor85]. **Parabolic** [Var61].  
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**Parallelizing** [Sea86].  
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**Part** [DS58, Fra64a, Fra64b].  
**Partial** [Bun74, CGO76, HV88a, HV88b, JS75, Meu89, OV85, Ske81, Var61].  
**Partitioned** [Joh71, Var70b].  
**Parts** [Fra61, GV61]. **PC** [MLB87].  
**PC-Matlab** [MLB87]. **PDFIND** [Cra86].  
**Pencil** [Doo79, Ruh78, Uhl76].  
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**Performance** [DKH86, DS86, Jor87].  
**Periodic** [BG78, BG84a].  
**Permutations** [GP74].  
**Perturbation** [DK70, Eld80, ES82, Kåg77a,

Kat66, Pai79a, Ruh70a, Ste73b, Ste77a, Ste77b, Ste78, Ste79b, Ste79c, Ste84d, Sun83, Wat88, Wed72, Wed73b, Dem87c]. **Perturbations** [AG87, AG88, Sch79, vdS75a]. **Perturbed** [Pai74b, Ste84b]. **Phenomena** [CW80]. **Piecewise** [BCS78]. **Pipeline** [DGK84]. **Pipelined** [HS86]. **Pite** [KR83]. **Pivot** [Coh74, Cry68, Duf74]. **Pivoting** [Bun71a, Bun74, Dav86, DK77, For60, HH89, Ser80, Ske81, Sor85, vdS70]. **pivots** [Cha85]. **Plane** [Giv58, Ham74, Saa86, Ste76c]. **Planes** [Pea01]. **Point** [Mol67, PJ84, Ste81a]. **Points** [Pea01, Ste75a]. **Poisson** [Bun69, BD74, BDGG71, BGN70, DF76, Dor70, Dor73, Hoc65, Hoc83, SS73]. **Polar** [Hig86a, HS88]. **Pole** [MP82]. **Polynomial** [Ash87, FG65, JMP83]. **Polynomials** [Hig88c, Loa78b, PS73, Ris73]. **Poorly** [Var70a]. **Portable** [Blu78, BBD<sup>+</sup>87, DS87b, Yoh79]. **Posed** [Dem87b, DK88, ES86, OS81, Var73]. **Positive** [AR85, Bar87, BR70, Cra86, CM83, CL86, DI86, GL81a, GL79, Hig88b, MPW65, MPW66, MW65, Nic74, Ris73, dBP77]. **Possessing** [Rei72]. **Power** [PP73]. **Practical** [CKS78, ML82, Pai70, Saa84, Wra75]. **Precision** [Gre81]. **Preconditioned** [Ada85, Axe85, Eis84, Mel87, Meu84]. **Preconditioner** [Cha88]. **Preconditioners** [BPS86a, BPS86b, JMP83, Jor84]. **Preconditioning** [Ash87, CMdP84, CGM85, Osb60, RW84a, RW84b]. **Prediction** [Cyb84, Lev47, Mak75, MG76]. **Presence** [CD87]. **Primitives** [JH87a]. **Principal** [EY39, FH60]. **Principle** [Arn51]. **Principles** [Lin61]. **Priori** [Wil68c]. **Probabilistic** [HS66]. **Probabilities** [GM86]. **Probability** [Dem88]. **Problem** [AGG88, AC76, Arn51, BG78, BG84b, CJ71, Cra73, Cra76, DNT83, Dem87b, Dem88, DS87a, Doo81a, Eld80, ES82, FH72, GL80, GNL79, GUW72, Hig88f, Huf87, Huf88, Kåg85, Kar74, Kau74, Kau77, Kub61, KF64, Lan50, LPS87, Par80b, PW70b, Rod73, Ruh74, Sch66, Smi67, Ste72, Ste75b, Ste76b, Ste78, Ste79c, Sun83, War81, Wed73a, Wil65a, vdS75b]. **Problems** [Abd71, BNP88, BW73, Bau65, Bjö67b, Bjö84, BPS81, BPS86a, BPS86b, BL85, Cli73, CW86, Cyb84, DK88, Eld77a, Eld83, Eld84, Eld85, ES86, ER80, FU69, FJL<sup>+</sup>88, Fri75, Fri77, FNO87, FG86, GH80, Gol65, Gol73, GKS76, GP73, GP76, Gup72, HL69, Hig85, Hig88e, HV87, JO71, JO77, KdV77, Kau83, LH69, LH74, Lew77, Loa85c, MW68c, McC72, MS73b, OS81, Pai79a, Pai79b, PS78, PS82a, PR68, Rut58, Sch86, SS79, Sco79a, Ste73b, Ste74, Ste77a, Var73, Dem87c]. **Procedure** [BS70, GH59, OS81]. **Proceedings** [DS78, Hea86, KR83]. **Process** [Bro73, KP76, Pai70, Sch64, Sco78]. **Processes** [SS76, Wil63, Wil68c]. **Processing** [APP88, Cyb78, ML82, Opp78]. **Processor** [AC84, GJM87, Jor87, Luk86b, MRK76]. **Processors** [AP86, Bis88a, BL86, BBD<sup>+</sup>87, BLL85, DGR79, FJL<sup>+</sup>88, ISS86, Jor84, LO83]. **Procrustes** [Hig88f, Sch66]. **Product** [Cup83, HLPW86, Win68]. **Products** [BL87, Cup84, SL89]. **Profile** [GPS76a, GPS76b]. **Program** [Blu78, CP77]. **Programming** [AS83, Lue73, LO83]. **Programs** [BBD<sup>+</sup>87, CW85b, DCHH88a, DS87b]. **Progress** [PR81]. **Projection** [Saa82, vdSV79]. **Projections** [Ste77a]. **Proof** [HP78]. **Propagation** [HS66]. **Properties** [AM65, FU69, Pai81, Ruh70b, SS85b, You70, Doo83]. **Property** [Rei72, You72]. **Proposed** [Ste81a]. **Pseudo** [GK65, GP73, GP76, PW70b, Ste77a, Wed73b]. **Pseudo-Inverse** [GK65]. **Pseudo-Inverses** [GP73, GP76, PW70b, Ste77a, Wed73b]. **Pseudoinverse** [Eld83].

- Q** [CD74].  
**QL** [BMRW68, Dub70, DMW68, HP78].  
**QR** [BR68, Bis88b, BBdH86, BMRW68, Bye86, Cha87, CMR86, DGKS76, DT71, Eld88, Fra61, Gen73a, GM86, Gra86, HS86, Hua81, Kar74, Luk86a, MPW70, MRW70, Nan85, Par65, Par66, Par68, PP73, RB68, Ste70, Ste77b, Ste84a, Wat82, Wil65b, Wil68b]. **Quadratic** [AL73, Bai88a, Gan81, GU70, Loi72, PD86, Ruh67, Ruh68, Sch64, Wil84, vK66]. **Quadrature** [GW69].  
**Quasicyclic** [Han62, Hen58].  
**Queueing** [Kau83]. **Quotient** [Par74b].  
**QZ** [Kau77, War75, Wil79].
- Random** [AOU87, Ste80].  
**Rank** [AG87, AG88, AGG88, BNS78, Cha87, Fos86, GKS76, Ste84c, TW70, Wat88, Wed73a, vdSV79, Dem87c].  
**Rank-Deficient** [Wed73a].  
**Rank-One** [BNS78].  
**Rank-Revealing** [Cha87].  
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**Ratio** [GU70]. **Rational** [BR68, RB68].  
**Rayleigh** [Par74b, Van71].  
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**Reconfigurable** [KB84].  
**Reconstruction** [GH84].  
**Rectangle** [Dor70].  
**Rectangular** [BD74, CMR86].  
**Recurrence** [Par76]. **Recursive** [APP88].  
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**Refining** [Dem87d]. **Reflections** [Par71].  
**Reflectors** [SP87].  
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**Reliable** [Enr79, HVH87].  
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**Representation** [BL87, SL89, SS76].  
**Research** [Duf77].  
**Residual** [KPJ82, SS86, Ske81].  
**Résolution** [GM83]. **Response** [Lau81].  
**Restoring** [vdSV79]. **Restricted** [AGG88].  
**Restructuring** [BG84a]. **Result** [Pai84].  
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**Riccati** [AL84, Bye83, Doo81b].  
**Richardson** [GO88, GV61].  
**Ridge** [GHW79]. **Right** [OP64, Saa87].  
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**RMS** [Lev47].  
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**Rules** [GW69].  
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**Sample-Data** [AC76]. **Satisfy** [Asp59].

- Scale** [BPS81, CW86, OS81].  
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**Scattered** [CM88]. **Scheduling** [OS86].  
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**Scientists** [Jen77b].  
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**Second-Order** [GV61]. **Sectioning** [Jen72].  
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**Semi-definite** [Hig89].  
**Semi-Iterative** [GV61, EN83].  
**Semidefinite** [Hig88b].  
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**Seminumerical** [Knu81].  
**Seminumerical-Algorithms** [Knu81].  
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**Separation** [Var79]. **Sequence** [Gup72].  
**Series** [Dur60].  
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**Shared** [GHL86, JH87a, KNP88].  
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**Shifted** [DT71, Man79].  
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**Simple** [SW80]. **Simplex** [Bar71].  
**Simplification** [JY83].  
**Simultaneous** [CJ70, CJ71, Cul78, JO71, JS75, Rut69, Rut70, Ste75c, Ste76d, Uhl73].  
**Single** [Ker82].  
**Singular** [AK75, Bai88a, Bar87, BS86, Bis88a, BL85, BLL85, BGG88, BG69, BN87, Cha82a, Cha82b, Cha84, CVD88, CWL83, Cup83, Don83, Doo79, Eld83, GK65, GLO81, GR70, Ham85, HN81, HVH87, Kåg85, Kåg86, Kar74, Loa73, Loa76, Loa85a, Luk80, Luk86b, MM83, Nas75, Pai85, Pai86, PD86, PS81, Par66, Ruh75, Sch86, Ste79b, Ste81b, Ste83, Ste84a, Ste84d, Sun83, Var75, Wed72].  
**Size** [Coh74, Cry68, Ske81]. **Skew** [Buc74, Buc77, Bun82, KdV77, Paa71, WG78].  
**Skew-Symmetric** [Buc74, Buc77, KdV77, WG78].  
**Slowly** [Sco79b].  
**Small** [CDH84, Ste84d, Cha85].  
**Smallest** [Bar87, Cul78, HVH87, Var75, Wat88, Dem87c]. **Social** [SS76].  
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**Solution** [Abd71, Arn51, Axe77, BCS78, BP75a, BS72, BW73, Bjö67a, Bjö68, Bjö88, BP70, BE68, BMPW66, BL85, Buc77, BD74, BDGG71, Cal86, Cli73, Cli76a, CG73, CGO76, Cox81, DI86, DF76, Dor70, Dor73, DR76, Ebe70, Enr79, ER80, ED83, FM67, GP70, GH80, GL81a, GW66, Gup72, HR88, Hig88c, Hoc65, Huf88, Jen72, Joh84, Ker82, Kog55, Kub61, KF64, LV75, Lan50, Lan70, MPW66, MW67, MdV77, ML82, OV85, Pai74a, Pai79a, PS75, PR70, Rei67, Rei71b, RO88, Ruh78, Rut58, Sch66, SS79, She55, Sto73, SS73, Und75, Var72, Var73, Wac66, WAC<sup>+</sup>88, You71]. **Solutions** [BG67, BG65, Cha84, CP76, CR79, DK88, GR70, Hig88a, OP64, Vet75, vdS75b]. **Solve** [Kau74].  
**Solver** [Bun69, Hoc83, LC88].  
**Solvers** [CKS78, DKH86, DS84, Joh86, SK78, Sto75a, Sto75b].  
**Solving** [ADD88, AL85, BCC78, BG76, Bau65, Bjö67b, Bun76, Bun85, BK77, BP71, BGN70, CMdP84, Doo81b, EHHR88, GP71, Gol65, GO88, HL69, HS52, Hig87b, Joh85, Joh87b, KNP87, KNP88, KW87, KB84, Kau77, LH69, LH74, MP74, Pai73, Par80a,

- Ros69, Saa81, Saa82, Saa84, Saa87, SS86, Sch86, Ste73a, Swa79, Swe77, Var61, WZ72].
- Some** [BS68, Bro73, BK77, Cyb78, DS84, DSS86, DR76, FL74, FU69, Gol73, Gol74, Hel76, Kan66, Kau77, Kub61, Loa83, Par74b, Saa84, Saa86, Wil77, dV82b].
- SOR** [Eva84, Nic74, Ruh74].
- Space** [Fos86, Pea01].
- Spaces** [AM65, Hal58].
- Sparse** [ADD88, Bun76, BR76, Cul78, CD74, CW79, Duf74, Duf77, DER86, DR75, DR76, DS78, ER74, ER80, Geo74, GH80, GL81a, GPS76a, GM76, GL81b, HS86, Kau79, Kau87, Lew77, Luk78, Pai71, PS75, PS78, PS82a, PS82b, Rei71b, RW72a, Ruh74, Ruh79, SLN75, Ste76b, Und75].
- Special** [Ros69, vK66].
- Specified** [CW79, PW71]. **Spectra** [Kah75].
- Spectral** [AG87, AG88, Des63, ER80, GH84, Hen62]. **Spectrum** [CW79, Jen77a, Ste75a].
- Speech** [MG76].
- Speed** [Bai88b, Hen58, Pan84, PT57].
- Sphere** [FG65]. **Spread** [Sco85].
- Square** [BH83, CM88, Eld77b, Gen73b, Hig86c, Hig87a]. **Squares** [Abd71, APP88, BNP88, Bau65, Bjö67a, Bjö67b, Bjö68, Bjö84, BG67, BG65, Cli73, Cox81, Cyb84, Eld77a, Eld80, Eld83, Eld84, Eld85, Gan81, Gen73b, GH80, Gol65, GKS76, GL80, GP73, GP76, GR70, GW66, GWM76, HL69, Huf87, Huf88, HV87, HV88a, HV88b, JO74, Kar74, KP81, LH69, LH74, Lin61, Loa83, Loa85c, Pai79a, Pai79b, PS78, PS82a, PS82b, PW70b, Ple74, PR68, Rei67, Saa86, SS79, Ste77a, Ste87, Wed73a, vdS75b, Dem87c].
- Squeezing** [DE84, DKH86].
- Stability** [Bjö87, Bun85, Bun87, Bus71a, Cyb80, Cyb84, Dem87a, Elm86, ER74, JW77, Mil75, Rei71a, Ske79, Ske80, TS87, vdS75b].
- Stabilization** [Bar71]. **Stable** [Bun82, BK77, Bus71b, Cra76, DGKS76, DK87, GH84, Loa85b, Pai79b, SK78, Var61].
- Staircase** [Fou84].
- Standard** [MW68c, Ste81a].
- STAR** [LV75, NV75]. **STAR-100** [NV75].
- State** [IP87, JP71].
- Stationary** [FG65, GM86, GU70].
- Statistical** [Gol69, Hot57].
- Statistics** [Coc68, Ham85].
- Step** [McC72, Ada85, NV83].
- Stewart** [Sun82].
- Storage** [Mer85, SL89, Ste76c].
- Straight** [Mad59]. **Strapdown** [BI75].
- Stratagem** [CM88].
- Strategies** [Bun74, Cut72].
- Strategy** [Buz86]. **Strong** [Bun87].
- Structural** [BW73, Ple86].
- Structure** [Cox81, Gre52, Kåg86, Ruh69a].
- Structures** [Vet75]. **Study** [Loa75b].
- Sturm** [Gup72]. **Style** [Bye84].
- Subject** [AG87, AG88, GU70, Mad59].
- Submatrix** [Wat88, Dem87c].
- Subprograms** [DCHH88a, LHKK79a, LHKK79b, DCDH88, DCHH88b].
- Subroutines** [Ste76a]. **Subsequent** [SS79].
- Subset** [HV87].
- Subspace** [HVV87, Saa81, Saa84].
- Subspaces** [BS79, BG73, Dem87d, Doo83, GLR86, Kåg86, Ruh70a, Ste71, Ste73b, Ste76d, Var70a]. **Substitution** [Sch09].
- Substructuring** [BPS86a, BPS86b].
- Successive** [BV68, GV61, PJ84].
- Sufficient** [FM84]. **Suitable** [AP86].
- Sulle** [Bel73]. **Summability** [NV83].
- Sun** [Pai84]. **Supercomputers** [Mel87].
- Survey** [Axe85, Duf77, Hel78, Hig87c, MM64].
- SVD** [BL86, CD87, Han87, HLPW86, Loa83].
- Sweeps** [Han88].
- Sylvester** [KNP87, KNP88, KW87].
- Symmetric** [Aas71, AL73, AL76, AGG88, BG76, BMW67, BR68, BS70, BBI71, BS86, BMRW68, BL85, Buc74, Buc77, Bud64, Bun71b, Bun74, Bun82, BG84b, BGG88, BK77, BKP76, BNS78, BP71, Bus71b, CJ70, Cra73, Cra86, Cul78, CD74, CW79, CW85b, CW85a, Cup81, CL86, DK77, DNT83, DI86, DS87a, Dub70, Ebe71, ER80, Fle76, GUW72,



- Hig88b, Hig88f, Jen72, KP74, KdV77, KM86a, LPS87, Mah79, MPW65, MRW70, MW65, MW67, MW68a, MW68c, MdV77, Mir60, Paa71, Pai70, Pai76, Pai80, Par80a, Par80b, PR70, PR81, PW69, PT57, RB68, Ruh79, Rut66, Rut70, Saa87, SLN75, Sch68, Sco78, Sco79a, Sco84, Sco85, Sea69, Ser80, Sim84, Ste70, Uhl73, Uhl76, Und75, WG78, You70].
- Symplectic** [Bye83, Loa84].
- System** [AL85, BCS78, BP75a, Bis88a, DS84, Doo81a, Joh86, MPW66, ML82, PR70, Rei67, SK78, Sto73, dV77].
- Systèmes** [GM83]. **Systems** [Axe77, Axe80, Axe85, BCC78, BG76, Bis88b, BE73, BP70, Boh75, BMPW66, Buc77, Bun76, Bun85, BK77, BP71, Cha84, Cha88, CKS78, CS87, Cli76a, CP76, CR79, Cyb80, DJK<sup>+</sup>88, DI86, DR76, EHHR88, Enr79, ED83, FM67, Fou84, GJMS88, GP70, GP71, Geo74, GL81a, GL79, GO88, HR88, Hel76, HS52, Hig87b, Hig88a, Hig88c, ISS86, JY83, Joh84, Joh85, Joh87b, JH87b, KB84, Ker82, LV75, MP74, Man77, MdV77, MP82, ML82, NV83, OR88, PS75, Par80a, Rei72, Rob77, RO88, Ros69, Ruh78, Saa81, Saa82, Saa84, Saa87, SS86, Ste73a, Ste81b, Swe77, Var72, Var73, Wac66, WAC<sup>+</sup>88, Wid78, You71, dBP77, vdS70].
- Systolic** [ES86, GK82, HI83, Kun82, Sch86, ST86, SHW86].
- Tales** [GP76]. **Taxonomy** [AMS88].
- Tchebychev** [Man77]. **Techniques** [BCS78, DK77, FJL<sup>+</sup>88, Kan66, KB84].
- Test** [DCHH88a]. **Tests** [HS66].
- Their** [FU69, RW72a].
- Theorem** [FV62, GHS88, Sco85, Sun82].
- Theorems** [BF60a, BF60b, ES82, Joh71, Kah67]. **Theoretical** [AGG88, Wra73].
- Theorie** [Jac46].
- Theory** [BV68, CW85a, DK88, Doo81a, Eld80, Gan59a, Gan59b, GK69, Hou74, Kat66, LF85, Lin61, Loa82, MM64, Nic74, NV83, Ort88, PP73, Ric66b, Sch09, SP87, Ste75b, Ste78, TW72, TA61, Wed73b].
- Thoughts** [Kau77]. **Three** [CR83, Dem87d].
- Time** [AC84, Dur60, MP82].
- Toeplitz** [BBdH86, Bun85, Cha88, Cyb80, CL86, Ris73, Tre64, Tre74, Wat73, Zoh69].
- Topological** [SS85b]. **Torus** [FG86].
- Total** [GL80, Huf87, Huf88, HV87, HV88a, HV88b, Dem87c]. **Totally** [dBP77].
- Tour** [Ste76b]. **Tracking** [PR81].
- Transformation** [BR68, BG67, EY39, ER80, Fra61, Kau87, Nas75, Pry85, Ruh69b, Rut58, Tsa75]. **Transformations** [AM65, BG65, Dem83a, DR75, Fro65, Gen73a, Gen73b, Kau79, MW31, RB68, SL89, Wal88].
- Transforming** [Giv58]. **Transition** [JP71].
- Transposition** [JH88]. **Trapezoid** [Lem73].
- Treatment** [Ste74, dV77]. **Trees** [ER88].
- Trench** [Zoh69]. **Triangular** [AK75, Bre70, CKS78, Cup84, EHHR88, ER74, ED83, Giv58, HR88, Hig87c, Hig88a, KNP87, KNP88, Lem73, LC88, Luk86b, ML82, Par74a, Par76, Phi71, Ris73, RO88].
- Triangularization** [Fro65, GK82, Hou58].
- Triangularizing** [Hua75].
- Tri-diagonal** [Aas71, BMW67, BR68, Bus71b, Dub70, FU69, Hel76, HP78, Joh84, Joh87b, JH87b, KB84, Ker82, KM86a, LV75, LPS87, MP74, RB68, Ros69, Ste70, Sto73, Sto75a, Sto75b, Swa79, Swe77, Var72, Wil68b, Hig86b].
- Tri-diagonalization** [CM88, GP74, MW68a, Sch68]. **Tri-diagonalizing** [Pai76].
- Tri-diagonals** [Mer85, PNO85].
- Truncated** [Han87]. **Truncation** [Kar74].
- Tutorial** [Mak75].
- Two** [Bis87, Bud64, Cra86, CM83, Fro65, HLPW86, Uhl73, Var79, Dem87a].
- Two-Dimensional** [Fro65].
- Two-Sided** [Bis87]. **Type** [AL76, Axe80, BE68, Ebe70, GP71, Hua75].
- Unconstrained** [DS83, Gol76].
- Undamped** [JO71].
- Underdetermined** [AL85, CP76].
- Underflow** [Dem84]. **Undersized** [Sch86].

**Understanding** [Wat82].  
**Unicomputers** [Hoc83]. **Uniform** [Cli76a].  
**Uniprocessor** [Cal86]. **Unit** [FG65].  
**Unitarily** [Mir60]. **Unitary** [AM65, Fra61, Fro65, Giv58, Gra86, Hou58].  
**Unrolling** [DH79]. **Unstable** [Loa85b].  
**Unsymmetric** [Axe80, CJ71, GWDF88, GL79, JO77, MW67, Saa81, Saa82, You70].  
**Updating** [Bjö84, Cup84, DGKS76, PNO85, ST86]. **Upper** [Ste76a].  
**Usage** [LHKK79a, LHKK79b].  
**Use** [Cli76b, CG73, DD88, DGR79, GJM87, Huf87, Pai70, PNO85, Rei72, Saa84].  
**Used** [RW72b]. **User** [Mol80].  
**Users** [DBMS78, MLB87]. **Uses** [Gol74].  
**Using** [Bre70, BLL85, CM88, CGP76, DH86, Ebe87, ER88, Fos86, GWDF88, GH80, GM86, Hoc65, HV87, JH87a, Loa82, PT57, SHW86, Sea69, Wal88].

**Validation** [Eld85, GHW79].  
**Value** [AK75, Bai88a, Bar87, BS86, Bis88a, BL85, BLL85, BGG88, BG69, Cha82a, Cha82b, CVD88, Cup83, FU69, GR70, Ham85, HN81, Kåg85, Loa76, Loa85a, Luk80, MM83, Nas75, Pai85, Pai86, PD86, PS81, Sch86, Ste83, Ste84a, Sun83, Var75, Wed72].  
**Values** [CWL83, Don83, Eld83, FG65, FH60, GK65, GLO81, GU70, Hen62, HVH87, Loa73, Lot56, Luk86b, Ruh75, Ste79b, Ste84d].  
**Vandermonde** [BE73, BP70, GP70, GP71, Gau75a, Gau75b, GT81, Hig87b, Hig88c, TG81, dV77]. **Vandermonde-like** [Hig88c].  
**Variable** [Gol76].  
**Variables** [GP73, HV87, Mad59, Ste77c].  
**Variation** [dV82b]. **Variation** [Hen62].  
**Vector** [AP86, Bis88a, Blu78, DGK84, DGR79, Hal58, Jor84, MRK76, Mel87, Meu84, OV85, PO87, Sch87, Vet75].  
**Vectorizable** [dV82b].  
**Vectorization** [Buz86, Ker82].  
**Vectors** [BN87, CWL83, GLO81, Pry84, Ruh83, Ste84b]. **Verfahren** [Jac46].  
**Very** [Pai71, Ruh70b, Wil72].

**VF** [DD88, KL88]. **VF/400** [KL88].  
**Vibration** [JO71]. **VLSI** [CS87].  
**Vol** [FJL+88]. **Volume** [CW85b, CW85a].  
**vorkommenden** [Jac46].

**W.F** [Zoh69]. **Ways** [ML78].  
**Weak** [Bun87]. **Weighted** [Bau65, Eld83].  
**Weighting** [AC76, Loa83, Loa85c].  
**Weiner** [Lev47]. **Which** [Asp59, Bus68, MdV77, Dem87c, Wat88].  
**Whose** [GP73, PR70]. **Winograd** [Bre70].  
**Without** [Gen73b, Ser80, CP77, Fos86].  
**WR** [Rut58]. **WY** [BL87, SL89].

**X** [CDH84, DH86, Sea86]. **X-MP** [Sea86].  
**X-MP-2** [CDH84]. **X-MP-4** [DH86].

**Young** [GHS88].

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