A Bibliography of Publications of Yousef Saad

Yousef Saad
Computer Science Dept., University of Minnesota
4-192 EE/CSci Building, 200 Union Street S.E.
Minneapolis, MN 55455
USA
Tel: +1 612 624 7804
FAX: +1 612 625 0572
E-mail: saad@cs.umn.edu (Internet)

28 June 2021
Version 2.69

Abstract
This bibliography records publications of Yousef Saad.

Title word cross-reference

3D [GHS10]. exp(\(-\tau A\))b [SSS10]. f(A)b [CAS11]. ILU [LSC03]. ILUS [CS97c]. k [CrFS09]. LU [CS97c, LSS03b, Saa94d]. tr(f(A)) [CS18, UCS17].

02 [AGPS03].

1988 [BTS+89]. 1993 [BCEP94].

20th [Sv00].

5 [WS93].

Abaffy [Saa92h]. ABS [Saa92h]. Abstract [SS85c]. accelerated [LS13b]. accelerating

[KKPS18]. Acceleration [BRZS18, KS87, Saa84b, CS99, rFS09, KS92, ZSTC06a]. acceptors [SKBS88]. acoustic [EGMS20]. Adapted [FSUS20]. ADI [MS92, MS93]. advances [GGL94]. algebra [DS91a]. Algebraic [LS17, GHS10, LSS03a, SS02b, SST04, SSC04, XLS16]. Algorithm [DS91b, LXV+16, Saa85a, SYEG00, ZS07, ESS86, GS87, GS88b, GS88a, GS89b, Saa74c, Saa80a, Saa82a, Saa86c, SS86c, SL86, SL88, SW93, Saa93a, SW96b, Saa91a]. algorithms [Saa74b]. Algorithms [AGPS03, ASSS11, BDG+10, CS92, CS85a, CS86, CTJ+95, CTSZ07, CZC+09, LSZ09, Saa85g, Saa92a, Saa92e, Saa94a, Saa94b, Saa06, BGSS14, BS94, CS93, CS96, FRSY96, GS94, KS87, Saa90b, Saa94e, US19, VS14]. Alternating [JSS87, SS85c]. amplitude [WGSC18]. Analysis [BSS09, BSS10, Saa92b, Saa94b, Saa97, Saa16, BJ+09, Saa94e, Saa00b]. analytics [KMB+18]. Anderson [BRZS18]. angle [LSS86, SL86, SL88]. Application
Applications [AGPS03, ASSS11, BK08, BGD+10, FSS02, Saa06, SrFS08, BJR+09, CSS02, CCS10, CS98a, CS98b, Saa83a, Saa90b, Saa90d, SAD+00, SS11, SCC04]. 
Approach [GS90a]. 
Approaching [BS02c, BK08, Saa74a, XLS18, LLCS02, dlGGS+05]. 
Approximation [CS94, CS97b, CS98b, Saa11a, SSS10, TS12].
Approximations [CAS11, Saa92b, GHS10, US19].
Aradic [IS86b, IS86a, SS86b, GS89d, SS89b].
Architectures [IS85, IS86b, IS86a, SS86b, GS89d, SS89b].
ASCII [Saa82a]. 
Assignment [S91b, Saa88d]. 
Associated [D91b, Atom [TZA+06].
Augmented [Saa97, CS97b]. 
Automated [KXS18]. 
Automatic [GS94, Saa92a].
Barcode [SS85e, SS87].
Based [BS05b, HS06, K07, SS99b, SrFS08, JSS07, LS16, MOKS12, SW93, SW96b]. 
Basic [PSWF93, Saa90a]. 
Basis [CTS93, CT94].
Benchmark [SW88b, SW88a, SW90].
Berkeley [Saa83c]. 
Between [BS02c].
Beyond [KXS18]. 
BILUM [SZ99a].
BILUTM [SZ99b].
Biharmonic [Saa80a, Saa82a]. 
Bisection [CrFS09].
Block [LS03, LSS03b, MS93, SS80, SZ99a, SZ99b, Saa03a, ZS08, CS97d, GS87, SS88b, GS88a, GS98b, Saa80b, ZS01, MS92].
Block-ADI [MS93, MS92].
block-partitioned [CS97a].
Boeing [SW89]. 
Book [Saa83c, Saa95]. 
bordered [CS85b].
Bounds [Saa94b, Saa94c]. 
brie [Saa20]. 
Brownian [ACSS12].
Bulk [TZA+06].
calculation [ZSTC06b]. 
Calculations [OBSC03, CS91, AJT+07, CT93, CTS94, JK99, SSS96, ZSTC06a].
Carolina [BCEP94].
Centenary [BCEP94].
Century [Sv90].
CFD [SWS00, SST04].
Chain [PSS92, Saa91c]. 
chains [BGB+10, RGSB08].
charge [BSTC05].
charging [RGSB08].
Chebyshev [ESS86, Saa84b, ZSTC06a, ZSTC06b, ZS07, ZCS14].
Chebyshev-filtered [ZSTC06a, ZSTC06b, ZCS14].
classes [BGB+10, RGSB08].
clusters [CTJ+95, JTD+94].
CM [PSWF93, WS93].
CM-5 [WS93, PSWF93].
Coarse [MS07a].
Coarse-Grid [MS07a].
Coarsening [MS07b, OKL15, US19].
codes [GS83, JK99, UMS17].
Communication [SS85a, SS85d, Saa86c, SS86b, SM95, SS89a, SS89b].
Community [CS12].
Compensation [MOKS12].
Complement [MS07a].
Complement-based [LS16].
Complements [BS05a].
Complex [PS85, PS87, Saa84a, Saa86b, Saa86e, Saa87c].
complexities [GS89d].
Complexity [ISS84, ISS86, Saa86a, Saa86c].
Component [JS07].
Component-based [JS07].
Computation [BS05a, BK08, Saa74a, XLS18, LLC02, dlGGS+05].
Computational [PS20, SM95, Fit86].
Computations [BTS+89, FWPS92, PSWF93, SW88a, Saa94a, SW88b, SW90, Saa90a].
Computers [FWPS92, S02a, AS88, AS89].
Computing [BSTC05, CAS11, Saa92e, S95, SSS10, BS16, ACSS12, CS18, PS07, Saa80c, TS12].
Concurrent [Saa95].
condition [Saa84a, Saa86b, Saa86e].
Conference [BCEP94, Fit86].
Confined [OBSC03].
Conjugate [SS85g, SS85f, SS86a, SYEG00, Saa06, Saa85c].
Conquer [LS13a].
consistent [ZSTC06a, ZSTC06b].
Constructed [BS05b].
construction [CrFS09].
continuation [CS85b].
contour
estimate [CS18]. Estimation [UCS17, DPS16, NPS16, USS17a].
esimator [BKS07]. Études [Saa74b].
Evolution [TZA+06, CTSZ07]. Evolving [Saa16]. EVSL [LXES19]. Exact [Saa03a].
excluded [BGB+10, SKBS88]. Experimental [CS97e]. exploration [Fit86]. Exponential [Saa92b, Saa98a]. Extended [SS85c].
Extraction [CS12]. Extreme [rFS12].

F [Saa95]. Face [KS05a]. faces [KS05a].
Factorized [BS02b, BS02c, BS02a].
Factorization [HS06, LS05a, Saa92d, Saa94d].
Factorizations [MOKS12, CCS10]. Fast [CrF09, USS17a, UCS17, US19, XLS18, GS87, GS88b, GS88a, GS89b, GS89d, US19].
February [GGL94]. feedback [Saa88d].
Fermi [SS11]. few [Saa94b, Saa94e]. field [ZSTC06a, ZSTC06b]. Filtered [BKS08, rFS12, Saa06, AKS17, ZSTC06a, ZSTC06b, ZCS14].
Filters [XLS18, LXV+16]. Finding [Saa03a]. finite [CTS93, CTS94, CTWS94, JTD+94, KSS03, KSSG04].
finite-difference [CTWS94].
forces [CJW96]. format [CS97c]. free [ZCS14]. frequency [LXsdH20]. Function [XS17, SS11]. Functional [BKS08, BSK+03, RGSB08, SS11, dGGS+05]. Functions [FSUS20]. Further [BSS10, Saa00b].

Gaussian [CS14, Saa85a, Saa86c, Saa86a, Saa86d].
General [CS92, CS94, LSC03, Saa94b, Saa96, SZ99a, SZ99b, SS99a, SS02a, CS93, Saa96, Saa92a, Saa92c, Saa94c, Saa94e, SSZ98, SZ99c, Szo1, SS02b, Saa07, ZXS20, ZXS21]. Generalized

[SS85f, SS86a, Saa91b, Saa93b]. Implicitly [SSW98]. Improving [USS17b]. Incomplete

[SS89a]. Global [SS89a]. GMRES [Saa91a, Saa86c, Saa93a]. GPU [AKS17, LS13b]. GPU-accelerated [LS13b]. Gradient [SS85g, SS85f, SS86a, SYEG00, Saa85c]. Gradient-like [SS85g]. Gram [Saa86c].
Graph [FSUS20, HS06, SFrS08, VS14, CrF09, SS94, OKLS15]. Graph-Based [SrF08]. Greedy [MS07b, MS07a]. Grid [MS07a]. Guest [BGSS14].
[LS06, MOKS12, CCS10, CS97c, Saa92d, SW93, Saa94d, SW96b]. Incremental [CCS10]. Indefinite [DKXS18, XS17, CS97e, Saa83d, Saa84c, Saa88a, Saa88b, Saa88c].

Indexing [SrFS08, VS14]. industrial [SAD +00]. Inexact [WSS98]. Initio [¨OBSC03, JTD +94]. inner [Saa91a, Saa93a]. inner-outer [Saa91a, Saa93a]. Institute [BTS +89]. integration [KKPS18, LXSH20]. interactions [ACSS12]. Interior [iTFS12]. International [BCEP94]. interval [DPS16, NPS16]. intervals [Saa83d]. Invariant [BKS08, PS07]. Inverse [BSS08, BSS05b, CS94, CS98b, TS11, BS02a, CS97d, CS97f, TS12]. Inverse-Based [BS05b]. Inverses [BS02c]. Invert [PS87, PS85]. Iron [TZA +06]. irregularly [FRSY96]. issue [ASSS11, BDG +10]. Iteration [Saa16, ZSTC06b, ZCS14]. Iterations [BKS08, CS98b, Saa006b]. Iterative [BTS +89, CS85b, GS83, SS81, Saa83d, SM95, Svo0, Saa03b, Saa20, CSS02, GGL94, JSS07, KMB +18, LS13b, OKL10, Saa81, Saa83d, Saa84c, Saa88a, Saa88b, Saa88c, Saa89b, SV00, Svo0, Saa01, Saa03b, Saa07, Saa20, SSMW00, XZS20, XZS21]. liquid [LLCS02]. localized [CJWS96]. Low [CS09a, DKXS18, LS13a, LS17, UMS17, CS08, LXS16, XLS16, ZXS20, XZS21].

Low-Rank [LS13a, LS17, LXS16, XLS16, ZXS20, XZS21]. LR [Saa74b]. LU [CCS10]. Lyapunov [Saa90c].

Magnetism [TZA +06]. March [GGL94]. Markov [PSS92, Saa91c]. Massively [FWPS92]. Material [SOS +00]. Materials [PS20, SCS10]. mathematical [Fit86, Fit86]. Matrices [CS92, CS94, LSC03, LS13a, ÖBSC03, PS87, Saa85b, SW89, Saa96, SZA9b, Saa16, BSS09, CS93, CS96, CS97d, CS97e, LS05a, LS16, PS85, Saa74a, Saa84c, Saa91a, Saa94c, UMS17, XS16]. Matrix [AGPS03, ASSS11, AEKS90, BDG +10, FSUS20, FWPS92, IS86a, OKLS15, PSWF93, SW88a, Saa92b, Saa94a, SW94, TS11, BJR +09, BKS07, BGSS14, CCE +18, CS98a, Saa83a, Saa83b, SW88b,
Saa90a, SW95, SW96a, SAD+00, TS12, USS17a, US19, VSS14, diGGS+05.

**Memory** [Saa87b, SM95, Saa87a]. **Message** [Saa87b, Saa87a, WS93]. **Method** [SS80, Saa87d, CTS93, CTS94, CTWS94, CS18, EGMS20, JTD+94, KSS03, KSSG04, LSS86, Saa80c, Saa85c, SCS12, TS12, ZS08, ZCS14].

**Methods** [BTS+89, CCSY98, CS14, DS91b, GS92a, LS17, PSS92, SS85c, SS85e, SS85f, SS86a, Saa87b, SS87, Saa91b, Saa92e, Saa93b, Saa97, SCS10, Saa11a, Saa11b, SSW98, SÖS+00, TS11, ACSS12, BSS09, BS87, BS89, BS91, CSS12, SS85b, rFSS09, Fit86, GS90b, GS92b, GGL94, JSS87, JSS07, KS92, KCS09, KCS11, Saa80a, Saa80b, Saa81, Saa82a, Saa82b, Saa83d, Saa83b, Saa83e, Saa84c, Saa87a, Saa88d, Saa89a, Saa90b, Saa90d, Saa91c, Saa92g, Saa92f, Saa98, Saa01, Saa03b, Saa20, SS98b].

**Minimal** [SS86c, SW93, SW96b].

**MMIQR** [LS06].

**Modeling** [PSS92, Fit86].

**Models** [Saa91c].

**Modern** [CSS02, SSC04].

**Modification** [MOKS12]. **Modified** [CS99, Saa84a, Saa86b].

**Module** [SW94, SW95, SW96a].

**Molecular** [CJWS96, BGB+10, JTD+94].

**Molecular-dynamics** [JTD+94].

**Molecules** [CTWS94].

**Moment** [Saa84a, Saa86b].

**Multi** [Saa96, Saa92c, SSZ98, SZ99c, SZ01].

**Multi-Elimination** [Saa96, Saa92c].

**Multi-level** [SSZ98, SZ99c, SZ01].

**Multicolor** [ZX20, Saa99b].

**Multielimination** [SZ99a].

**Multigrid** [CS85a, CS86].

**Multilevel** [BS05b, KXS18, LS06, SSZ99a, SZ99b, Saa05, SrFSS08, LSS03a, OKLS15, SS02b, SOT04, SSC04, US19, XLS16].

**Multiple** [KMB+18].

**Multiprocessor**.

**Multiprocessors** [CS85a, CS885, CS86, ISS84, ISS86, CSS87].

**Multi-eliminators** [SS85c, Saa85a, JSS87, SSS87, Saa86c].

**Multisecant** [rFSS09].

**Multistage** [HS06].

**Multivariate** [CS14].

**N** [Saa83c].

**nanocrystals** [CTSZ07, CZC+09].

**Neighborhood** [KS07, KS05b].

**Newton** [BS94, WS98].

**NN** [CrFSS09].

**Non-standard** [SS99c].

**Nonlinear** [BS87, BS89, BS90, BS91, BS94, EGMS20, rFSS09, KS92, SGSM15].

**Nonsymmetric** [LS03b, MS92, MS93, MS07b, Saa84b, SS85g, Saa85b, ESS86, Saa84c, SS86c, Saa87c, Saa88a, Saa88b, Saa88c, Saa89b].

**Normal** [BSS09].

**North** [BCEP94].

**null** [ITS07].

**null-space** [ITS07].

**numbers** [Saa84a, Saa86b].

**Numerical** [PSS92, Saa83b, Saa87b, Saa90c, Saa92g, RCS10, Saa11b, Saa87a, Saa91c].

**oblique** [Saa80a, Saa82a].

**Observer** [DS91b].

**October** [BTS+89].

**ODE** [GS83].

**Operator** [Saa92b, CS98a].

**OPRA** [KS05a].

**OPRA-faces** [KS05a].

**Optimal** [CS09b, CS08].

**Optimization** [NBS10, NBS12, BSS09, KS09, KS11].

**order** [CSW00, CTWS94, JTD+94].

**origin** [Saa74c].

**Orthogonal** [CS09b, KS05b, KS07, CS08, Saa83d].

**orthogonalization** [SW93, SW96b].

**other** [Saa80a, Saa82a].

**outer** [Saa91a, Saa93a].

**Overlapping** [CS92, CS93, CS96, LS05b].

**overview** [Saa90d].

**P_SPARSLIB** [SW94, SW95, SW96a, SKL+97].

**Package** [SW88a, SS02a, SW88b, SW90].

**papers** [GGL94].

**Parabolic** [GS92a, CS89c, SS99a, Saa90b, GS90a, GS92b].

**Parallel** [BDG+10, BGSS14, BSK+03, CS92, S97f, FWPS92, FRSY96, GS90a, HS06, IS85, IS86b, IS86a, SS85e, SS85f, SS86b, SS86a, Saa87b, Saa87c, SW94, SS99c, Saa01, Saa02a, SÖS+00, ZSTC06a, AS88, AS89, CS99, GS87, GS98, GS98b].
GS88a, GS89b, GS89c, GS89a, GS89d, GHS10, LSS03a, LLC502, SS80, Saa87a, SS89b, Saa92c, SW95, SW96a, SKL+97, SS99b, SSC04, AGPS03, ASSS11.

Parlett [Saa83c]. pARMS [LSS03a, SS02a].
Partial [CSS85, DS91b, Saa85b, XS16, CSS87, Saa88a], partially [BSTC05].
Particle [LLCS02]. partitioned [CSS87, Saa88d].
Partitioning [GS94, LLCS02, Saa74a, VSS14].
Passing [Saa87b, Saa87a, WS93]. Performance [WS93]. periodic [AJT+07]. Phase [WGSC18]. physical [CSS02, SSC04].
Pivoting [BS02b, BS02a, LSS05a]. plane [JKSC99, Saa83a, Saa84a, Saa86b, Saa86e, Saa87c]. plane-wave [JKSC99]. PMAA [AGPS03]. PMAA’10 [ASSS11]. Point [LS03, LSS03b]. pole [Saa88d]. Polynomial [BKS08, CAS11, FSUS20, LXV+16, GS90b, LXSdH20, Saa85c]. polynomials [Saa83d, Saa83a, Saa87c, SSS10]. portable [SKL+97].
Positive [SS80, VSS14]. posteriori [CS18]. potential [CTS93, CTS94]. power [XZS21]. Practical [BTS+89, Saa84c, Saa85c, BTS+89].
Preconditioned [CCSY98, CS14, SS85f, SS86a, Saa91b, Saa93b, Saa98, LS13b, Saa91a, Saa92f, Saa93a]. Preconditioner [BS02b, DKXS18, LSS05b, LS06, Saa96, SZ99a, SZ99b, XS17, BS02a, CS97c, Saa92c, LXS16, ZXS20, ZXS21]. Preconditioners [BS05b, CS94, CS98b, LS13a, LS17, LS03, LSS03b, MS92, MS93, MS94, CS97a, CS97e, CS97f, GSS03, LXS16, Saa94c, SZ99c, Saa07].
Preconditioning [CS98a, KS03, KSSG04, OKS10, Saa88a, Saa88b, Saa88c, SAD+00, Saa03a, SMSW00, SSF93, LXSdH20, OKLS15, SS99b, SZ01, SSF95, VS14, WSS98]. preconditionings [Saa85c].
Predicting [SOS+00, CTJ+95].
Preserving [CCSY98, KS07, KS05b].
Prewhitening [SS14]. primitives [WS93]. principles [AJT+07]. probing [TS12].
Problem
[NBS10, NBS12, CKV+03, SCS12, Saa83c].
Problems [BSS10, DS91b, rFS12, GGL94, IS85, LS06, LXV+16, LS03, LSS03b, MS07b, PS89, Saa84b, Saa11b, Saa16, SFF93, XLS18, CSW00, DS91a, EGMS20, FRSY96, IS86b, KLS16, KKPS18, Saa82b, Saa83a, Saa83b, Saa83e, Saa89b, Saa90d, Saa92g, SSC+96, SAD+00, SST04, SF95, WSS98, ZS08].
Projection [BS91, KS07, Saa82b, Saa83c, Saa88d, Saa91c, Saa92h, ITS07, Saa80a, Saa82a].
Projection-Based [KS07]. Projections [KS07, KS05b]. Properties [SS85b, SS88, SOS+00, CTJ+95, CTSZ07, CZC+09]. pseudo [CT93, CT94]. pseudo-potential [CT93, CT94]. pseudopotential [CTW94, JTD+94]. pseudopotentials [CKV+03]. PSPARSLIB [SS98a]. purpose [Saa92a].

QR [LS06, Saa74b]. Quadrature [UCS17]. quantum [CJWS96]. Quasi [SW93, SW96b]. Quasi-minimal [SW93, SW96b].
Raleigh [BCEP94]. Rank [CS09b, DKXS18, LS13a, LS17, CS08, LXS16, USS17b, UMS17, XLS16, ZXS20, ZXS21].
ranks [USS17a]. rates [Saa80b]. Ratio [NBS10, NBS12]. Rational [GSS03, KXS18, SS11, XS16, XLS17, EGMS20, GS90a]. Real [PS87, CKV+03, PS85]. recognition [KS05a]. recursive [CF4S09, LSS03a, SSS02b, SST04, SSSC04]. recycling [SGSM15]. Reduction [CS09a, KS07, NBS10, SrFS08, GSS87, GS88b, GS88a, GS89b, KCS09, KCS11].
Relations [BS02c]. reordering [OKLS15].
Reorderings [Saa05]. reorthogonalized [BSTC05]. reservoir [Fit86]. Residual [Saa06, SS86c, SW93, SW96b, Saa00b].
Residual-type \cite{Saa06}. Restart \cite{LXV+16}.

Restarted \cite{SSW98}. Restarting \cite{SSW98b}. Restricted \cite{LS05b}.

retrieval \cite{WGSC18}. Review \cite{Saa83c, Saa92b}. Reviews \cite{Saa95}.

rewighted \cite{WGSC18}. Right \cite{SSW98, SS98b}.

Restricted \cite{SSW98, SS98b}.

Robust \cite{SS99c, SS99b, Saa87c, Saa87b, Saa87a}.

Saddle \cite{LS03, SSS93}. Sampling \cite{CS14, US19}. scalable \cite{KMB18}. Scale \cite{BTS+89}.

Schur \cite{BS95a, DKXS18, GHS10, KLS16, LS05b, LXS16, SS99a, Saa07, ZXS21, ZS08}.

SchurRAS \cite{LS05b}. Science \cite{PS20}.

Scientific \cite{Saa95}. seismic \cite{Fit86}.

Selection \cite{MS07a}. Self \cite{ZSC10, AJT+02}.

Self-consistent-field \cite{ZTCS08, ZTCS06a}.

Semantic \cite{SrFS08, VS14}.

semiconductor \cite{KS87}.

semiconductors \cite{SKBS88}.

separation \cite{CCE+18}.

Sequence \cite{BRZS18}.

sets \cite{SS14}.

Several \cite{Saa87d}.

Sham \cite{SCS12, ZCS14}.

Shanks \cite{BRZS18}.

Shared \cite{Saa87b, Saa87a}.

Shift \cite{PS87, PS85}.

Shifts \cite{Saa74c}.

shrinkage \cite{US17b}.

Si \cite{JTD+94}.

Sides \cite{Saa87d, KMB18}.

Signal \cite{FSUS20}.

simulations \cite{KS87}.

simulations \cite{ACSS12, JTD+94}.

Singular \cite{CS09a}.

skyline \cite{CS97c}.

Slicing \cite{LSXS19, SC12}.

Smallest \cite{BS05a}.

SMASH \cite{CCE+18}.

SNAP \cite{ITS07}.

Software \cite{AEKS90, LXEX19, Saa92a}.

solid \cite{LLCS02}.

solid-liquid \cite{LLCS02}.

Solution \cite{DS91a, GS92a, ISS84, IS85, ISS86, ISS86, SSC+96, SS98a, SS99a, GSS87, GSS88b, GSS88a, GSS96b, GS89e, GS89a, GS90b, GS90a, GS92b, GS83, ITS07, KSS03, KSSG04, SS81, Saa83d, Saa83b, Saa89b, Saa90c, Saa91c, SW95, SW96a, Sw00, SOT04, SGMS15}.

solver \cite{KMB18, LSS03a, SSS93b, SS94c}.

Solvers \cite{SM95, GS89d, GHS10, KPKS18, LS13b, SW94, SKL+97, SOT04}.

Solving \cite{AS88, AS89, CSS85, CSS87, LXSdH20, MS92, MS93, PS89, SS80, Saa84b, SS85g, SS85e, SS85s, Saa87d, SS87, SSS85a, BS91, CS85b, EGMS20, ES86, LSS86, Saa80a, Saa81, Saa82a, Saa82b, Saa83a, Saa83e, Saa84c, SS86c, SL86, Saa87c, SL88, ZCS14}.

Some \cite{GS90d, Sw89, SSS93a, BS99b, Saa84c, Saa96e}.

SOR \cite{MS94}.

space \cite{CKV+03, ITS07}.

SPARK \cite{SW90}.

Sparse \cite{AEKS90, CS92, CS98b, FWPS92, GHS10, GGL94, IS86a, LSC03, LS06, MS92, MS93, MS94, PSWF93, PS89, SW88a, SW89, Saa84a, SW94, SM95, Saa96, SS98a, SZ99a, SSS99a, SSS99c, SS02a, AS88, AS89, CS93, CS96, CS97c, GSS03, JSS07, LS05a, Saa82b, Saa83a, Saa83e, SW88b, SW90, Saa90a, Saa92c, Saa94c, SW95, SW96a, SKL+97, SSZ98, SZ99c, SCS03, SS99a, SCS99a, SCS99b, SS02a, BS91, SCS91b, Saa93b, Saa97, Saa11a, Saa16a, ACSS12, SSS93b, SSS93a, SSS93a}.

sparse-Sparse \cite{CSS93b}.

SPARSKIT \cite{Saa90a}.

Special \cite{ASSS11, BJ+90, BDG+10}.

Spectra \cite{XS16, CJWS96}.

Spectral \cite{BS05a, KLS16, SGMS15, LSXS19, LSY+16, US17a}.

Spectrum \cite{DS91b, FSSU20, SC12}.

Spectrum-Adapted \cite{FSSU20}.

Spedicato \cite{Saa92a}.

Squares \cite{CS11, LS06, XS16, Saa83a, Saa84a, Saa86b, Saa86c, Saa87c}.

standard \cite{Saa99c}.

Standards \cite{AEKS90}.

state \cite{Saa88d}.

states \cite{GBG+10, SKBS88}.

Statistics \cite{SW89}.

Stiefel \cite{SS80}.

Stochastic \cite{UCS17}.

Strategies \cite{MS07b, MOXS12, PS87, SS99c, LLCS02, PS85, SOT01, SGMS15, SMSW00}.

Strategy \cite{MS07a}.

structural \cite{CTJ+95}.

Structure \cite{SCS10, AJT+07, CTS93, CTS94, CKV+03, JKSC99, SSC+96}.

Structured \cite{GGL94, CCE+18, FSSU96}.

Structures \cite{Saa94a, SM95, SSS93}.

study \cite{CS97e}.

Subgraph \cite{CS12}.

Subspace \cite{CCSY98, CS14, SSS93a, BS99b, Saa92b, Saa92e, Saa93b, Saa97, SSS93a, Saa11a, AAXE12, BSS09, BS89, CS97b, ESS86, Saa81, Saa84c, Saa84d, Saa84e, Saa84f, Saa84g, Saa84h}.
Theoretical [Saa84c, Saa94b, Saa94e, SSZ98, Saa06].

Unstructured [MS94]. Unsymmetric [Saa80a, Saa80c, Saa81, Saa82a]. updating [VS14]. Use [Saa84c, Saa85c, Saa87c]. Using [BKS08, CKV03, SS98a, SSC04, BS05a, CS18, JTD94, KS05a, LXSdH20, OKLS15, Saa83d, USS17a, UMS17, VSS14, ZSTC06b].

Values [VSS14]. Variations [Saa80c, SST04]. Vectors [CS98b, UCS17, USS17b, WGSC18, ZSTC06a]. Vibrational [CJWS96, CZC09]. Volume [BJR09].


References

Ando:2012:KSM

REFERENCES

gust 14, 2012. CODEN JCPSA6. ISSN 1089-7690.


REFERENCES


Daniel L. Boley, Donald G. Truhlar, Yousef Saad, Robert E. Wyatt, and Lee A. Collins, editors. *Practical Iterative Methods for Large Scale Computations: Proceedings of the Min-
REFERENCES

Chen:2011:CLS


Cai:2018:SSM


Calgaro:2010:IL


Chan:1998:PSP


Chelikowsky:1996:MDQ


Chelikowsky:2003:URS

REFERENCES

Chen:2009:FAG


Chan:1985:MAH


Chan:1985:IMS


 Chan:1986:MAH


Cai:1992:ODD


Cai:1993:ODD


Cai:1996:ODD


Castillo:1997:TSA


Chapman:1997:DAK


Chow:1997:ESI


Chow:1997:PAI


Castillo:1998:PME


Chow:1998:AIP

REFERENCES

Calvez:1999:MKA


Chen:2008:TSO


Chen:2009:LVV


Chen:2009:TSO

Chen:2009:TSG

Chen:2012:DSE

Chen:2018:PEE

Chow:2014:PKS


Chen:2008:TSO

Chen:2009:LVV

Chen:2012:DSE

Chen:2018:PEE

Jie Chen and Yousef Saad. A posteriori error estimate for computing $\text{tr}(f(A))$ by using the Lanczos method. *Numerical Linear Algebra with Applications*, 25(5):??, October 2018. COD-
REFERENCES

DEN NLAAEM. ISSN 1070-5325 (print), 1099-1506 (electronic).


[DS91a] B. N. Datta and Y. Saad. Solution of large linear algebra prob-

**Datta:1991:AML**


**El-Guide:2020:RAM**


**Elman:1986:HCK**


**Ferng:1992:SMC**

REFERENCES

Golub:1994:RAI

Giraud:2010:SAS

Gallopoulos:1987:PBC

Gallopoulos:1988:PBCa

Gallopoulos:1988:PBCb

Gallopoulos:1989:PSPb


REFERENCES


Gallopoulos:1989:PBC


Gallopoulos:1989:PSPa


Gallopoulos:1989:SFE


Gallopoulos:1990:PSP


Gallopoulos:1990:ESP


Gallopoulos:1992:ESPb


Gallopoulos:1992:ESP


Goehring:1994:HAA

Guillaume:2003:RAP


Henon:2006:PMI


Ipsen:1985:IPA


Ipsen:1986:IPAb


Ipsen:1986:IPAAa


Ipsen:1984:CDL


Ilic:2007:LSS

REFERENCES


REFERENCES


REFERENCES


Kechroud:2003:PTS


Kechroud:2004:PTS


Kalantzis:2018:BAM


Little:2002:PPS


Little:2003:BPSa


Li:2005:CVI

REFERENCES


Little:2003:BPSb


Lin:2016:ASD


Li:2019:ESL


Li:2016:SCB


Liu:2020:STD


Li:2016:TRL


MacLachlan:2012:MCS

Ma:1992:BAP


Ma:1993:BAP


Ma:1994:DIS


MacLachlan:2007:GSC


Ngo:2010:TR


Ngo:2012:TR


Napoli:2016:EEE

Ogut:2003:ICL


Osei-Kuffuor:2015:MRU


Osei-Kuffuor:2010:PHL


Parlett:1985:CSI


Parlett:1987:CSI


Philippe:1989:SLS


Philippe:2007:CED


Polizzi:2020:CMS

[PS20] Eric Polizzi and Yousef Saad. Computational materials science

**Philipp:1992:NMM**


**Petiton:1993:BSM**


**Fang:2009:TCM**


**Fang:2012:FLP**


**Rocca:2008:TCT**


**Saad:1974:CEL**


**Saad:1974:ETO**


**Saad:1974:SOA**


**Saad:1980:LBA**

[Saa80a] Y. Saad. The Lanczos biorthogonalization algorithm and other oblique projection methods for solving large unsymmetric systems. Report 1036, Department of Computer Science, University
of Illinois at Urbana-Champaign, Urbana, IL, USA, 1980. 44 pp.


Saad:1983:ISI


Saad:1983:PMS


Saad:1984:CNM


Saad:1984:CAT


Saad:1984:GEHa

Y. Saad. Gaussian elimination on hypercubes. Technical Report YALEU/DCS/RR-462, Department of Computer Science,
Yale University, New Haven, CT, USA, 1986.


REFERENCES


[Saa90c] Youcef Saad. Numerical solution of large Lyapunov equa-

Saad:1988:PTI


Saad:1988:PTNa


Saad:1988:PTNb


Saad:1988:PDM


Saad:1989:KSM


[Saa90c] Youcef Saad. Numerical solution of large Lyapunov equa-

Saad:1989:NSL


[Saa90c] Youcef Saad. Numerical solution of large Lyapunov equa-

**Saad:1990:OKS**


**Saad:1991:FIO**


**Saad:1991:SIP**


**Saad:1991:PMN**


**Saad:1992:AST**


**Saad:1992:ASK**


**Saad:1992:IPM**

REFERENCES


Saad:1994:HPP


Saad:1994:IDT


Saad:1994:TEBb


Saad:1995:BNR


Saad:1996:IME


Saad:1997:AAK


Saad:1998:PKS


Saad:2000:E


REFERENCES


REFERENCES

Said:1988:HES


Saad:1995:DSC


Saad:1997:PPL


Saad:1986:NAS


Saad:1988:NAS


Saad:1995:DSC


Sosonkina:2000:PSL


Stathopoulos:2000:PMT

Andreas Stathopoulos, Serdar Ögüt, Yousef Saad, James Chelikowsky, and Hanchul Kim. Parallel methods and tools for predicting material properties.

Sakellaridi:2008:GBM


Saad:1985:TPH


Saad:1985:ADM


Saad:1985:DCH


Saad:1980:PBS


Saad:1981:IMS

REFERENCES

Saad:1985:DPM


Saad:1985:PIP


Saad:1985:CGL


Saad:1986:PIP


Saad:1986:DCH


Saad:1986:GGM


Saad:1987:PDM


Saad:1987:TPH


Saad:1989:DCH

COEJ. ISSN 0167-8191 (print), 1872-7336 (electronic).

**Saad:1998:SDS**


**Stathopoulos:1998:RTJ**


**Saad:1999:DSC**


**Saad:1999:EPM**


**Saad:1999:NSP**


**Saad:2002:PPS**


[Saad:1985:SED] Y. Saad, A. Sameh, and P. Saylor. Solving elliptic difference

**Sheehan:2010:CET**


**SSZ98**

**Saad:2004:VAR**


**SST04**

**Stathopoulos:1998:DTR**


**SW88a**

**Saad:1988:BPSa**

REFERENCES

University of Illinois at Urbana-Champaign, Center for Supercomputing Research and Development, Urbana, IL 61801, USA, 1988. 10 pp.


Saad:2000:DVC


Saad:1999:BBV


Saad:1999:BDB


Saad:1999:DTC


Saad:1999:DTT


Saad:2001:EML


Tang:2011:DDT

REFERENCES


REFERENCES

**Vecharynski:2014:FUA**


**Vecharynski:2014:GPU**


**Wang:2018:PRR**


**Wu:1998:INP**


**Xi:2016:AMP**


**Xi:2018:FCS**


**Xi:2016:CPS**

Yuanzhe Xi and Yousef Saad. Computing partial spectra with least-squares rational filters.

**Wu:1993:PCM**

REFERENCES

Xi:2017:RFP  
Yuanzhe Xi and Yousef Saad.  
A rational function preconditioner for indefinite sparse linear systems.  
CODEN SJOCE3.  
ISSN 1064-8275 (print), 1095-7197 (electronic).  

Zhou:2014:CFS  
Yunkai Zhou, James R. Chelikowsky, and Yousef Saad.  
Chebyshev-filtered subspace iteration method free of sparse diagonalization for solving the Kohn–Sham equation.  
CODEN JCTPAH.  
ISSN 0021-9991 (print), 1090-2716 (electronic).  

Zhou:2007:CDA  
Yunkai Zhou and Yousef Saad.  
A Chebyshev–Davidson algorithm for large symmetric eigenproblems.  
CODEN SIAMAEL.  
ISSN 0895-4798 (print), 1095-7162 (electronic).

Zhou:2008:BKS  
Yunkai Zhou and Yousef Saad.  
Block Krylov–Schur method for large symmetric eigenvalue problems.  
CODEN NUALEG.  
ISSN 1017-1398 (print), 1572-9265 (electronic).  

Zhou:2006:SCF  
Yunkai Zhou, Yousef Saad, Murilo L. Tiago, and James R. Chelikowsky.  
Parallel self-consistent-field calculations via Chebyshev-filtered subspace acceleration.  
CODEN PLEEE8.  
ISSN 1539-3755 (print), 1550-2376 (electronic).  

Zhou:2006:BKS  
Yunkai Zhou, Yousef Saad, Murilo L. Tiago, and James R. Chelikowsky.  
Self-consistent-field calculation using Chebyshev-filtered subspace iteration.  
CODEN JCTPAH.  
ISSN 0021-9991 (print), 1090-2716 (electronic).  
REFERENCES

Zheng:2020:MLR


Zheng:2021:PSC