A Complete Bibliography of Publications in *Numerische Mathematik* (2020–2029)

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Title word cross-reference


2D [DBR22].
3D [Fun22].

4 [Cia22].


Darcy \[BB22\].

data \[BGM22b, DES21, GH21\].

decay \[DHL20, PS21, XL20\].
decomposition \[BS21, DNT21, DJC20, DBR22, GGS22, Nat20a, Nat20b, NN21\].
deep \[BTU22\].
definite \[FLNS21\].
degenerating \[KKK22b\].
degree \[LL21a\].

dekker \[LO21, LO20\].
deluxe \[Huy22\].
densities \[Sag22\].
dependent \[BFM22, JLZ20, NKL22\].
derivation \[CFEV21, CJT21\].
derivatives \[Win20\].
develop \[Fun22\].
development \[CHL21a\].
DG \[MSSCT21\].

Difference \[BGM22a, HH20, LZ20\].
differentiation \[BPR21\].
diffusion \[BNO20, BNO22, CCZ20, CFS20, CHHM22, DS22, EGGK22, FLNS21, JK22, Liu21, NN21\].

Diffusion-dominated \[BNO20\].
diffusive \[LSV21\].
dimensional \[AN20, CH20, CH21, CZB22, GH21, JZZ22, Liu21, Yse20\].
dimensions \[FMS21, WM21\].

Direct \[ATW22, ABMS21, Liu21, SNO20\].
direction \[HK22b\].

Dirichlet \[HSS+20, Win20, XY21\].

Discontinuous \[AN20, ABMS21, BBJP20, DRG+20, GK20, GLW21, GTV22, HK22b, HHMX21, HSS+20, Liu21, WS21\].
discrete

DBG22, DHL20, ERSS20, GLW21, GSTU20, HJK21, HKP20, Har21, HK22b, HH20, KL17, Kri20, Kri21, LZ20, LW21, NKL21, SMdD22, XRV21].
discretization \[HL21a, HL21b, KB22, PK22\].
discretizations \[Huy22\].
dispersive \[CJT21, EOR22\].
displacement \[ABMS21, BGM22b, Sun22\].
dissipation \[CZ22\].
dissipative \[HH20, SX21\].
distance \[MS20\].
distribution \[HJP20\].
div \[ZZ22\].
div-conforming \[ZZ22\].
Divergence \[KK20\].
Divergence-conforming \[KK20\].
does \[Wan21\].

Domain \[BS21, AL20, CDE20, DNT21, DBR22, GÖSS20, GGS22, KK20, KW20, Nat20a, Nat20b\].
domains \[BS21, AL20, CDE20, DNT21, DBR22, GÖSS20, GGS22, KK20, KW20, Nat20a, Nat20b\].
dominated \[BDP22, BySTZ21, BFM22, CWS22, CDE20, DS21\].

dominated \[BNO20, BNO22\].

DPG \[FHS20, FHN22\].
dqds \[FP22\].
driven \[CZ22\].

DtN \[LY22\].
dual \[BK22a, Jin22\].
dynamic \[HL21a, HL21b, Nab21\].

Dynamical \[Pag21, KNV21\].
dynamics \[BTU22, HLW20, HL20a, HLS22\].

E-schemes \[Kri21\].

effect \[AJH21\].

Efficient \[Lio20, NP21a, BKR21, C21, KPW20\].
eigenfunctions \[LV22\].
eigenvalue \[AHP21, AL20, FP22, GK20, Hal21, RDYL21\].
eigenvalues \[CEP21, Tro22\].
elastic \[ABMS21, BR20, DBR22, GN21, LY22\].
elasticity \[HHMX21\].
elastodynamics \[DRG+20\].
electrical \[GH21\].
electrode \[GH21\].
electromagnetic \[Cia22, NLK22\].
element \[AJH21, BOS22, BW21, Ber21, BHL20, BNO20, BHL22, BNO22, CCZ20, CLY22, CWHMB21, CMS20, CLX21, CHL21a, CH20, CH21, CZB22, DST22, EBL22, ER20, FMS21, GöSS20, Guo20, HKP20, HL22, JWL22, KKK22b, KLL21, KPP+21, LZ20, LY22, MCT20, NN21, PK22, Sei22, XY21\].
elements \[AP21, ATW22, CW20, Cia22, GK20, GL22, HW21a, HW21b, ZZ22\].
elective \[CEP21, CKP22, CNP22, CMR21, CLX21, CDE20, Har21, HL20b, HW21a, HW21b, HSS+20, NN21, SSVS21, SNO20\].

Energy


[BGM22a, CH20, HKP20, AP21, ATW22, AJH21, BOS22, BW21, Ber21, BHL20, BNO20, BHL22, BNO22, CCZ20, CGT20, CZ22, CFS20, CLY22, CHHM22, CMS20, CLX21, CHL21a, Cia22, CBZ22, ER20, FLMM20, GF22, GKV20, GL20, GL22, HW21a, HW21b, HH20, HL22, JWL22, KK20, KKK22b, KL21, LZ20, LY22, Nab21, NN21, PK22, XY21, ZZ22, CH21].


Jacobi [BPR21, FPT20]. joined [DBR22].


matrix

matrix-theoretic

Maximal

Maximizing

MDFEM

Meshes

methods

miscible

Mixed

model

modelling

moment

Monk

multicomponent

multidimensional

Multilevel

multipoint

multiscale

Navier

NCEVM

near

negative

nematic

Neumann

Newton

node

noise

Non-asymptotic

non-autonomous

non-coercive

non-energy

non-linear

non-monotone

non-selfadjoint

non-stationary

non-symmetric

nonholonomic

Nonlinear

nonsymmetric

normal

norms
Numerical [ABNP21, BR20, Ber21, CEG+20, CMR21, CZ21, EGK22, GN21, MT20, NSD20, Zha21, AA21, BBFR21, BCD20, BCG20, BD21, CJT21, FCH22a, FCH22b, GSTU20, GSY20, KH20, KN21, Li21, SS22, SNO20].

numerics [TLO22a, TLO22b].

NURBS [DS21].

obstacle [Füh20, HKP20]. one [Cia22]. only [ABMS21]. open [AA21].

operator [AK21, DST22, DES21, GSUT21, MCT20, SNO20]. operators [AK20, BAMR22, CEG+20, CEPR21, DS22, HPSV21]. Optimal [CMS20, GSUT21, XL20, AN20, BBFR21, Ber20, BS21, CJT21, DP20, DS21, ERSS20, GSY20, HPSV21, HT22, JL20, JW22, PK22, VZ22].

Optimization [DLO20, BDP22, HJK21, NP21b]. optimized [CP22, DNT21].

order [AP21, AB21, BBMR21, BPR21, CCZ20, CEP21, CT22, CKP22, CNP22, CLX21, DRG+20, FPT20, Füh20, HL21a, HL21b, JLZ20, NN21, ZJN21].

orthogonal [XL20]. Orthogonality [BW21]. orthonormal [CIV21].

Oscillation [KV21]. outflow [KN21]. overlapping [GGS22].


perturbed [KH20]. Petrov [PK22]. physical [WS21].


PML [CHL21a]. point [KKK+22a]. points [CP22]. Pointwise [KK20].


\textbf{QMC} [NN21]. \textbf{quadratic} [MS20, VZ22]. \textbf{quadrature} [APR22, dAFR20, AJH21, CEG\textsuperscript{+}20, JK20, MR21, TNW21]. \textbf{quadrilaterals} [ATW22]. \textbf{quantification} [KKK\textsuperscript{+}22a, Sag22]. \textbf{quantum} [BDP22]. \textbf{quasi} [HPSV21, MT20]. \textbf{quasi-homogeneous} [MT20]. \textbf{quasi-optimal} [HPSV21].


\textbf{sampling} [LRS19, LRS20]. \textbf{satisfying} [BCG20]. \textbf{scalar} [CMS20, CH20, CH21, GTV22]. \textbf{scales} [HLS22]. \textbf{scattering} [CWHMB21, EBL22, LY22, NKL22, Zha21]. \textbf{scheme}
schemes
[AB21, BBMRB21, BPR21, BFM22, CT22, CHHM22, CMS20, CJT21, FPT20, FRZ21, GF22, JK20, Kri20, Kri21, KLMNS22, LSV21, RLK20, SX21].

Schrödinger [CEG+20, LW21]. Schur [DBR22, SNO20]. Schwarz [CP22].

screens [CWHMB21]. SDE [MP21]. Second [BBMRB21, dAFR20, BPR21, CKP22, CNP22, CWS22, HL21a, HL21b, JLZ20, LSV21].

second-kind [CWS22]. second-moment [LL21b]. Second-order [BBMRB21, dAFR20, BPR21, CKP22, CNP22, HL21a, HL21b, JLZ20].


semigroups [AB21]. semilinear [CMR21, HLO20, HL21a].


SGFEM [CZB22]. shallow [FHN22]. Shape [BDP22, DLO20].

sharp [ABNP21, HW21a, HW21b, LSW22]. shells [FHN22]. sign [Cia22]. sign-changing [Cia22]. Signorini [CH21, CH20]. simulations [DHL20].

singular [BK22a]. singularities [FS20, TNW21]. singularly [KH20].


solutions [AJH21, BK22a, Fun22, KN21, MT20, SNO20, Yse20]. solver [HPSV21]. solvers [Huy22]. solves [Loi20]. some [OS22].

sound [EBL22]. sound-hard [EBL22]. space [FMS21, NSD20, PS21].


square [AK20]. squares [Füh20, LM21]. Stability [BK22b, BPR21, CNP22, KN21, BDG22, FCH22a, FCH22b, Har21].

stabilized [BN20, BNO22, JK22]. Stable [CZB22, KL17, DNT21, DRG+20, NP21b, NKL21]. staggered [MSST21].

state [GS20]. states [NSD20]. stationary [BFM22]. Steklov [AL20].

stepping [BFM22, JLZ20, MP21]. stepsizesize [HS22]. Stieltjes [APR22].

stiff [HLO20, ON22]. stochastic [ABNP21, BD21, EMPS20]. Stokes [AN20, AK21, BBMRB21, BB22, BD21, BFM22, CLY22, Fun22, GK20, KN21, LM21, Li21, Mat22, MSSCT21].

Stokes-Brinkman [BBMRB21].


sublinear-time [CIV21]. submanifolds [LRS19, LRS20]. sum [WZL22].
superconvergence [MR21]. superconvergent [HSS+20]. Superior [AK20].
supporting [DLO20]. Surface [Guo20, CDE20, CLL+22, FMS21]. surfaces
[BK22b, EGK22, KLL21]. symmetric [FLNS21, HHMX21, Huy22]. system
[BCG20, CFS20, FLMM20, GF22, NSD20]. systems
[FLNS21, FMS21, MP21, Pag21, XRV21].

T [LL21a]. T-splines [LL21a]. tangential [HL22]. Taylor [DST22].
technique [Sun22]. techniques [BB22]. telegraph [KH20]. temporal
[CHL+21b]. tensor [BNW20, DJC20, EMP20, HHMX21, ZLN21]. term
[CIV21, HL20a, JZZ22]. tetrahedral [KKK22b]. thawed [BL22]. their
[IGS21, PS21]. theoretic [MSSCT21]. theoretical [BCD20]. theory
[LL21b]. thermal [MNR22]. thin [NKL22]. third [ZLN21]. third-order
[ZLN21]. Thomas [BW21]. Three [ZZ22, AN20, CZB22, WM21].
three-dimensional [AN20, CZB22]. Time [NKL22, BL22, BFM22,
CHHM22, CIV21, DHL20, EF21, GÖSS20, HJK21, HLS22, HL21a, HL21b,
Huy22, JZZ22, Loi20, MS20, MP21, NSD20, TLO22b, VZ22, TLO22a].
Time-dependent [NKL22, BFM22, JZZ22]. time-discrete [HJK21].
time-domain [GÖSS20]. time-sliced [BL22]. time-splitting [VZ22].
time-stepping [BFM22, MP21]. timestepping [GLW21]. tomography
[GH21]. topology [BDP22]. torsion [BR20]. total
[BK22a, GSTU20, Mat22]. total-variation [BK22a]. traces
[BDK+20, WZL22, Yse20]. transforms [CIV21]. transmission [Har21].
Transparent [JK20, KH20, EOR22]. transport
[BBMRB21, Ber20, BS21, ERSS20, HT22, JZ20]. trapezoidal [WM21].
triple [FP22]. Two [MCT20, AK20, BCG20, CH20, CH21, FLMM20,
FMS21, GH21, GF22, Nat20a, Nat20b, NSD20]. two-by-two [AK20].
two-dimensional [CH20, CH21, GH21]. Two-level
[MCT20, Nat20a, Nat20b]. two-space [FMS21]. two-speed [BCG20]. type
[AK21, BK22b, EF21, FMP22, GT22, HK22b, Le22, SMS22].

ultraweak [FHS20]. unbounded [KH20]. uncertainty [KKK+22a, Sag22].
Unconditionally [SX21]. unfitted [CLX21, SSVS21]. uniaxially [BNW20].
 unified [Le22]. uniform [NN21]. Uniqueness [Har21]. unitary [BDG20].
Universal [BAMR22]. using [AB21, AK22, HW21a, HW21b, NN21, SNO20].
Uzawa [AK21].

validation [MT20]. value [GN21, KK20, RL20]. valued [DES21]. values
[BB22]. variable [CMS20]. variables [KPW20]. variation
[BK22a, GSTU20]. Variational
[BCD20, AJH21, BOS22, CGT20, HL20a, Win20]. velocities [FLMM20].
velocity [HL22]. version [MCT20]. veto [HJP20]. via
[AM22, BKR21, KPW20, KN21, NP21b]. virtual [FMS21]. Vlasov [JZZ22].
Voigt [AN20]. volume
REFERENCES

[CGT20, CZ22, CFS20, CHHM22, FLMM20, GF22, GL20, Nab21].


zone [CEG+20].

References


**Altmann:2021:MGP**


**Aylwin:2021:EQR**


**Axelsson:2020:SPP**


**Axelsson:2021:KIU**

Allen:2022:BCP


Armentano:2020:SEP


Akrivis:2022:PEE


Anh:2020:DGA


Ainsworth:2021:PHO


Alahmadi:2022:RGQ

Arbogast:2022:DSM


Ben-Artzi:2022:UAC


Beik:2022:PTC


Bauer:2022:KIA


Bartsch:2021:NIB

REFERENCES


REFERENCES

18

- Bevilacqua:2020:FIU

- Burman:2022:FDL

- Buffa:2020:MAR

- Braid:2022:STO

- Berman:2020:SAP
REFERENCES


REFERENCES

Burman:2022:CBE

Barrenechea:2020:MHM

Bartels:2022:EET

Beschle:2022:SEE

Bunder:2021:EFP
REFERENCES


REFERENCES


REFERENCES


REFERENCES


[Cia22] Patrick Ciarlet, Jr. On the approximation of electromagnetic fields by edge finite elements — Part 4: analysis of the model


Claeys:2022:RTC


Curry:2020:CLG


Carstensen:2022:CAH


Chen:2020:CEP


Chandler-Wilde:2021:BEM


Chandler-Wilde:2022:CEN

S. N. Chandler-Wilde and E. A. Spence. Coercivity, essential norms, and the Galerkin method for second-kind inte-


[DBR22] Zdenek Dostál, Tomáš Brzobohatý, and Lubomír Říha. On the spectrum of Schur complements of 2D elastic clusters joined by


References


Despres:2021:CSO


Delgado:2020:EOP


Duru:2020:SDG


Dornisch:2021:IMM


Danczul:2022:RBM

REFERENCES


REFERENCES

Hairer:2020:LTA


Heltai:2020:PEE


Hochbruck:2021:CIE


Hochbruck:2021:IET


Hu:2022:EFE

Hochbruck:2020:CLM


Hairer:2022:LSI


Hairer:2020:FBA


Haberl:2021:CQO


Hu:2020:SHD

REFERENCES


[Hollbacher:2021:CSI]

[Hollbacher:2021:SIM]


Jin:2020:IIS


Jin:2022:VFP


Kong:2020:TBC


Kashiwabara:2020:PEE


Kaarnioja:2022:FAP

REFERENCES


Kazashi:2021:SPP


Kopteva:2020:LPE


Kurz:2021:FPE


Kritzer:2020:EWI


Kriel:2020:EIF


REFERENCES


Li:2021:SAD


Lin:2021:MCS


Laurent:2021:MR


Lemoine:2021:RIE


Lange:2020:NDF


Lange:2021:CND

Loisel:2020:EAS


Lelievre:2019:HMC


Lelievre:2020:CHM


Lovbak:2021:MMC

REFERENCES


Marchand:2020:TLP

Miller:2021:MSA

Millar:2022:PNN

Marmignon:2022:ERA

Merle:2021:ATS
Melenk:2021:SRK


Micu:2020:ACW


Malyshev:2020:CDC


Mazza:2021:MTS


Matsue:2020:NVB

REFERENCES


REFERENCES

55


[NSD20] Daxin Nie, Jing Sun, and Weihua Deng. Numerical algorithm for the space-time fractional Fokker–Planck system with two internal
REFERENCES


REFERENCES


[Simoes:2022:EDL] Alexandre Anahory Simoes, Juan Carlos Marrero, and David Martín de Diego. Exact discrete Lagrangian mechanics for nonholonomic


Schillings:2020:CLA

Sun:2022:NAR

Shen:2021:UPP

Takayasu:2022:CRN

Takayasu:2022:RNN


REFERENCES

Wu:2021:CTR


Wu:2021:PPC


Wang:2022:MSC


Xiang:2020:ODR


Xavier:2021:EEF


Xu:2021:AFS

Liwei Xu and Tao Yin. Analysis of the Fourier series Dirichlet-to-Neumann boundary condition of the Helmholtz equation and its application to finite element methods. *Numerische Mathematik*,
Yserentant:2020:ESL


Zhang:2021:NMS


Zeng:2021:AMC


Zhang:2022:TFG