Jari A Toivanen

List of Publications by Year
in descending order

74 papers	2,053 citations	236925 25 h-index	243625 44 g-index
79 all docs	79 docs citations	79 times ranked	1080 citing authors

#	Article	IF	Citations
1	Operator splitting methods for American option pricing. Applied Mathematics Letters, 2004, 17, 809-814.	2.7	157
2	Solution of time-independent Schrödinger equation by the imaginary time propagation method. Journal of Computational Physics, 2007, 221, 148-157.	3.8	131
3	Efficient numerical methods for pricing American options under stochastic volatility. Numerical Methods for Partial Differential Equations, 2008, 24, 104-126.	3.6	126
4	A Parallel Fast Direct Solver for Block Tridiagonal Systems with Separable Matrices of Arbitrary Dimension. SIAM Journal of Scientific Computing, 1999, 20, 1778-1793.	2.8	113
5	Multidisciplinary shape optimization in aerodynamics and electromagnetics using genetic algorithms. International Journal for Numerical Methods in Fluids, 1999, 30, 149-159.	1.6	105
6	Operator splitting methods for pricing American options under stochastic volatility. Numerische Mathematik, 2009, 113, 299-324.	1.9	103
7	An Adaptive Multimeme Algorithm for Designing HIV Multidrug Therapies. IEEE/ACM Transactions on Computational Biology and Bioinformatics, 2007, 4, 264-278.	3.0	95
8	Numerical Comparison of Some Penalty-Based Constraint Handling Techniques in Genetic Algorithms. Journal of Global Optimization, 2003, 27, 427-446.	1.8	94
9	Numerical Valuation of European and American Options under Kou's Jump-Diffusion Model. SIAM Journal of Scientific Computing, 2008, 30, 1949-1970.	2.8	70
10	An iterative method for pricing American options under jump-diffusion models. Applied Numerical Mathematics, 2011, 61, 821-831.	2.1	63
11	COMPONENTWISE SPLITTING METHODS FOR PRICING AMERICAN OPTIONS UNDER STOCHASTIC VOLATILITY. International Journal of Theoretical and Applied Finance, 2007, 10, 331-361.	0.5	58
12	An IMEX-Scheme for Pricing Options under Stochastic Volatility Models with Jumps. SIAM Journal of Scientific Computing, 2014, 36, B817-B834.	2.8	56
13	BENCHOP â€" The BENCHmarking project in option pricing. International Journal of Computer Mathematics, 2015, 92, 2361-2379.	1.8	51
14	An adaptive evolutionary algorithm with intelligent mutation local searchers for designing multidrug therapies for HIV. Applied Intelligence, 2007, 27, 219-235.	5.3	50
15	A state-dependent Riccati equation-based estimator approach for HIV feedback control. Optimal Control Applications and Methods, 2006, 27, 93-121.	2.1	49
16	IMEX schemes for pricing options under jumpâ€"diffusion models. Applied Numerical Mathematics, 2014, 84, 33-45.	2.1	48
17	Efficient metacomputing of elliptic linear and non-linear problems. Journal of Parallel and Distributed Computing, 2003, 63, 564-577.	4.1	36
18	An algebraic multigrid based shifted-Laplacian preconditioner for the Helmholtz equation. Journal of Computational Physics, 2007, 226, 1196-1210.	3.8	36

#	Article	IF	Citations
19	A domain decomposition method for discontinuous Galerkin discretizations of Helmholtz problems with plane waves and Lagrange multipliers. International Journal for Numerical Methods in Engineering, 2009, 78, 1513-1531.	2.8	36
20	Fictitious Domain Methods for the Numerical Solution of Two-Dimensional Scattering Problems. Journal of Computational Physics, 1998, 145, 89-109.	3.8	33
21	Overview of the discontinuous enrichment method, the ultraâ€weak variational formulation, and the partition of unity method for acoustic scattering in the medium frequency regime and performance comparisons. International Journal for Numerical Methods in Engineering, 2012, 89, 403-417.	2.8	33
22	Lagrange Multiplier Approach with Optimized Finite Difference Stencils for Pricing American Options under Stochastic Volatility. SIAM Journal of Scientific Computing, 2009, 31, 2646-2664.	2.8	32
23	A Parallel Fictitious Domain Method for the Three-Dimensional Helmholtz Equation. SIAM Journal of Scientific Computing, 2003, 24, 1567-1588.	2.8	31
24	Interactive Solution Approach to a Multiobjective Optimization Problem in a Paper Machine Headbox Design. Journal of Optimization Theory and Applications, 2003, 116, 265-281.	1.5	28
25	Fast direct solution of the Helmholtz equation with a perfectly matched layer or an absorbing boundary condition. International Journal for Numerical Methods in Engineering, 2003, 57, 2007-2025.	2.8	27
26	A multilevel FETIâ€DP method and its performance for problems with billions of degrees of freedom. International Journal for Numerical Methods in Engineering, 2018, 116, 661-682.	2.8	26
27	A Nonstandard Cyclic Reduction Method, Its Variants and Stability. SIAM Journal on Matrix Analysis and Applications, 1999, 20, 628-645.	1.4	23
28	A high-order front-tracking finite difference method for pricing American options under jump-diffusion models. Journal of Computational Finance, 2010, 13, 61-79.	0.3	22
29	A domain decomposition solver for acoustic scattering by elastic objects in layered media. Journal of Computational Physics, 2008, 227, 8685-8698.	3.8	21
30	Comparison and survey of finite difference methods for pricing American options under finite activity jump-diffusion models. International Journal of Computer Mathematics, 2012, 89, 1112-1134.	1.8	21
31	Adaptive finite differences and IMEX time-stepping to price options under Bates model. International Journal of Computer Mathematics, 2015, 92, 2515-2529.	1.8	21
32	A damping preconditioner for time-harmonic wave equations in fluid and elastic material. Journal of Computational Physics, 2009, 228, 1466-1479.	3.8	18
33	ADI schemes for valuing European options under the Bates model. Applied Numerical Mathematics, 2018, 130, 143-156.	2.1	18
34	Preconditioned iterative methods on sparse subspaces. Applied Mathematics Letters, 2006, 19, 1191-1197.	2.7	16
35	A Componentwise Splitting Method for Pricing American Options Under the Bates Model. Computational Methods in Applied Sciences (Springer), 2010, , 213-227.	0.3	16
36	Iterative Methods for Pricing American Options under the Bates Model. Procedia Computer Science, 2013, 18, 1136-1144.	2.0	15

#	ARTICLE	IF	CITATIONS
37	Reduced order models for pricing European and American options under stochastic volatility and jump-diffusion models. Journal of Computational Science, 2017, 20, 198-204.	2.9	15
38	Multidisciplinary shape optimization in aerodynamics and electromagnetics using genetic algorithms. International Journal for Numerical Methods in Fluids, 1999, 30, 149-159.	1.6	15
39	A moving mesh fictitious domain approach for shape optimization problems. ESAIM: Mathematical Modelling and Numerical Analysis, 2000, 34, 31-45.	1.9	11
40	Designing Paper Machine Headbox Using GA. Materials and Manufacturing Processes, 2003, 18, 533-541.	4.7	10
41	A fast iterative solver for scattering by elastic objects in layered media. Applied Numerical Mathematics, 2007, 57, 811-820.	2.1	10
42	A Projected Algebraic Multigrid Method for Linear Complementarity Problems. Numerical Mathematics, 2012, 5, 85-98.	1.3	9
43	Parallel fictitious domain method for a non-linear elliptic neumann boundary value problem. Numerical Linear Algebra With Applications, 1999, 6, 51-60.	1.6	8
44	Building blocks for oddâ€"even multigrid with applications to reduced systems. Journal of Computational and Applied Mathematics, 2001, 131, 15-33.	2.0	8
45	A fast direct solver for elliptic problems with a divergence constraint. Numerical Linear Algebra With Applications, 2002, 9, 629-652.	1.6	8
46	Material Surface Design to Counter Electromagnetic Interrogation of Targets. SIAM Journal on Applied Mathematics, 2006, 66, 1027-1049.	1.8	8
47	A Domain Embedding Method for Scattering Problems with an Absorbing Boundary or a Perfectly Matched Layer. Journal of Computational Acoustics, 2003, 11, 159-174.	1.0	5
48	Reduced Order Models for Pricing American Options under Stochastic Volatility and Jump-diffusion Models. Procedia Computer Science, 2016, 80, 734-743.	2.0	5
49	Application of Operator Splitting Methods in Finance. Scientific Computation, 2016, , 541-575.	0.2	5
50	A multigrid preconditioner and automatic differentiation for non-equilibrium radiation diffusion problems. Journal of Computational Physics, 2005, 207, 354-374.	3.8	4
51	LOCAL CONTROL OF SOUND IN STOCHASTIC DOMAINS BASED ON FINITE ELEMENT MODELS. Journal of Computational Acoustics, 2011, 19, 205-219.	1.0	4
52	On solving separable block tridiagonal linear systems using a GPU implementation of radix-4 PSCR method. Journal of Parallel and Distributed Computing, 2018, 115, 56-66.	4.1	4
53	Computation of a few smallest eigenvalues of elliptic operators using fast elliptic solvers. Communications in Numerical Methods in Engineering, 2001, 17, 521-527.	1.3	3
54	A hybrid discontinuous Galerkin method for computing the ground state solution of Boseâ€"Einstein condensates. Journal of Computational Physics, 2012, 231, 4709-4722.	3.8	3

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55	An optimal local active noise control method based on stochastic finite element models. Journal of Sound and Vibration, 2013, 332, 6924-6933.	3.9	3
56	A Parallel Domain Decomposition Method for the Helmholtz Equation in Layered Media. SIAM Journal of Scientific Computing, 2019, 41, C505-C521.	2.8	3
57	Fast Poisson Solvers for Graphics Processing Units. Lecture Notes in Computer Science, 2013, , 265-279.	1.3	3
58	Shape design optimization in 2D aerodynamics using Genetic Algorithms on parallel computers. , 1996, , 395-402.		3
59	A Fast Helmholtz Solver for Scattering by a Sound-soft Target in Sediment. Lecture Notes in Computational Science and Engineering, 2007, , 595-602.	0.3	3
60	A finite element method for virtual reality data. Comptes Rendus Mathematique, 2000, 330, 1107-1111.	0.5	2
61	An Iterative Method for Pricing American Options Under Jump-Diffusion Models. SSRN Electronic Journal, 2011, , .	0.4	2
62	Time-Periodic Solutions of Wave Equation via Controllability and Fictitious Domain Methods. , 2003, , 805-810.		2
63	A Comparison and Survey of Finite Difference Methods for Pricing American Options Under Finite Activity Jump-Diffusion Models. SSRN Electronic Journal, 0, , .	0.4	1
64	An Operator Splitting Method for Pricing American Options. Computational Methods in Applied Sciences (Springer), 2008, , 279-292.	0.3	1
65	Fast Direct Solver for a Time-harmonic Electromagnetic Problem with an Application. , 2003, , 675-680.		1
66	A Projected Algebraic Multigrid Method for Linear Complementarity Problems. SSRN Electronic Journal, 0, , .	0.4	1
67	Numerical experiments with a parallel fast direct elliptic solver on Cray T3E. Lecture Notes in Computer Science, 1997, , 722-725.	1.3	0
68	A parallel fast direct solver with applications. Lecture Notes in Computer Science, 1998, , 910-912.	1.3	0
69	Computational methods for PDEs in finance. International Journal of Computer Mathematics, 2012, 89, 1093-1093.	1.8	0
70	A fictitious domain method for linear elasticity problems. , 2001, , 346-350.		0
71	A Domain Imbedding Method with Distributed Lagrange Multipliers for Acoustic Scattering Problems. , 2003, , 252-256.		0
72	A Domain Decomposition Solver for the Discontinuous Enrichment Method for the Helmholtz Equation. Lecture Notes in Computational Science and Engineering, 2013, , 207-214.	0.3	0

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73	Robust and Efficient IMEX Schemes for Option Pricing under Jump-Diffusion Models. SSRN Electronic Journal, 0, , .	0.4	0
74	A fast Fourier transform based direct solver for the Helmholtz problem. Numerical Linear Algebra With Applications, 2020, 27, e2283.	1.6	0