

# Oliver Rheinbach

## List of Publications by Year in descending order

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77  
papers

1,038  
citations

471371

17  
h-index

477173

29  
g-index

82  
all docs

82  
docs citations

82  
times ranked

330  
citing authors

#	ARTICLE	IF	CITATIONS
1	Effective hyperelastic material parameters from microstructures constructed using the planar Boolean model. <i>Computational Mechanics</i> , 2022, 69, 1295-1321.	2.2	2
2	Adaptive GDSW Coarse Spaces of Reduced Dimension for Overlapping Schwarz Methods. <i>SIAM Journal of Scientific Computing</i> , 2022, 44, A1176-A1204.	1.3	4
3	Energy efficiency of nonlinear domain decomposition methods. <i>International Journal of High Performance Computing Applications</i> , 2021, 35, 237-253.	2.4	2
4	Variational Methods and Parallel Solvers in Chemo-Mechanics. <i>Proceedings in Applied Mathematics and Mechanics</i> , 2021, 20, e202000272.	0.2	2
5	Fully-coupled micro-macro finite element simulations of the Nakajima test using parallel computational homogenization. <i>Computational Mechanics</i> , 2021, 68, 1153-1178.	2.2	1
6	Using logistic regression model selection towards interpretable machine learning in mineral prospectivity modeling. <i>Chemie Der Erde</i> , 2021, 81, 125826.	0.8	10
7	Variational Settings and Domain Decomposition Based Solution Schemes for a Coupled Deformation-Diffusion Problem. <i>Proceedings in Applied Mathematics and Mechanics</i> , 2021, 21, .	0.2	1
8	Computational homogenization with million-way parallelism using domain decomposition methods. <i>Computational Mechanics</i> , 2020, 65, 1-22.	2.2	15
9	Parallel adaptive FETI-DP using lightweight asynchronous dynamic load balancing. <i>International Journal for Numerical Methods in Engineering</i> , 2020, 121, 621-643.	1.5	6
10	EXASTEEL: Towards a Virtual Laboratory for the Multiscale Simulation of Dual-Phase Steel Using High-Performance Computing. <i>Lecture Notes in Computational Science and Engineering</i> , 2020, , 351-404.	0.1	3
11	A Three-level Extension of the GDSW Overlapping Schwarz Preconditioner in Three Dimensions. <i>Lecture Notes in Computational Science and Engineering</i> , 2020, , 185-192.	0.1	5
12	FROSch: A Fast And Robust Overlapping Schwarz Domain Decomposition Preconditioner Based on Xpetra in Trilinos. <i>Lecture Notes in Computational Science and Engineering</i> , 2020, , 176-184.	0.1	9
13	A Closer Look at Local Eigenvalue Solvers for Adaptive FETI-DP and BDDC. <i>Lecture Notes in Computational Science and Engineering</i> , 2020, , 235-242.	0.1	1
14	FETI-DP Solvers and Deal.II for Problems in Dislocation Mechanics. <i>Proceedings in Applied Mathematics and Mechanics</i> , 2019, 19, e201900292.	0.2	0
15	Applying the FROSch Overlapping Schwarz Preconditioner to Dislocation Mechanics in Deal.II. <i>Proceedings in Applied Mathematics and Mechanics</i> , 2019, 19, e201900337.	0.2	0
16	Logistic regression for potential modeling. <i>Proceedings in Applied Mathematics and Mechanics</i> , 2019, 19, e201900039.	0.2	1
17	Adaptive GDSW Coarse Spaces for Overlapping Schwarz Methods in Three Dimensions. <i>SIAM Journal of Scientific Computing</i> , 2019, 41, A3045-A3072.	1.3	13
18	A Three-Level Extension of the GDSW Overlapping Schwarz Preconditioner in Two Dimensions. <i>Lecture Notes in Computational Science and Engineering</i> , 2019, , 187-204.	0.1	3

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19	Multicore Performance Engineering of Sparse Triangular Solves Using a Modified Roofline Model. , 2018, , .		6
20	Remarks on Fluid-Structure Interaction Simulations in Realistic Arterial Geometries with regard to the Transmural Stress Distribution. Proceedings in Applied Mathematics and Mechanics, 2018, 18, e201800312.	0.2	0
21	An Adaptive GDSW Coarse Space for Two-Level Overlapping Schwarz Methods in Two Dimensions. Lecture Notes in Computational Science and Engineering, 2018, , 373-382.	0.1	3
22	Improving the Parallel Performance of Overlapping Schwarz Methods by Using a Smaller Energy Minimizing Coarse Space. Lecture Notes in Computational Science and Engineering, 2018, , 383-392.	0.1	9
23	Preconditioning of Iterative Eigenvalue Problem Solvers in Adaptive FETI-DP. Lecture Notes in Computational Science and Engineering, 2018, , 415-423.	0.1	1
24	On the Accuracy of the Inner Newton Iteration in Nonlinear Domain Decomposition. Lecture Notes in Computational Science and Engineering, 2018, , 435-443.	0.1	1
25	Using Algebraic Multigrid in Inexact BDDC Domain Decomposition Methods. Lecture Notes in Computational Science and Engineering, 2018, , 425-433.	0.1	1
26	Nonlinear FETI-DP and BDDC Methods: A Unified Framework and Parallel Results. SIAM Journal of Scientific Computing, 2017, 39, C417-C451.	1.3	20
27	Steps Towards More Realistic FSI Simulations of Coronary Arteries. Proceedings in Applied Mathematics and Mechanics, 2017, 17, 187-188.	0.2	0
28	Adaptive Coarse Spaces for FETI-DP in Three Dimensions with Applications to Heterogeneous Diffusion Problems. Lecture Notes in Computational Science and Engineering, 2017, , 187-196.	0.1	2
29	New Nonlinear FETI-DP Methods Based on a Partial Nonlinear Elimination of Variables. Lecture Notes in Computational Science and Engineering, 2017, , 207-215.	0.1	2
30	Parallel Overlapping Schwarz with an Energy-Minimizing Coarse Space. Lecture Notes in Computational Science and Engineering, 2017, , 353-360.	0.1	1
31	Newton-Krylov-FETI-DP with Adaptive Coarse Spaces. Lecture Notes in Computational Science and Engineering, 2017, , 197-205.	0.1	2
32	A Parallel Implementation of a Two-Level Overlapping Schwarz Method with Energy-Minimizing Coarse Space Based on Trilinos. SIAM Journal of Scientific Computing, 2016, 38, C713-C747.	1.3	27
33	Scalability of Classical Algebraic Multigrid for Elasticity to Half a Million Parallel Tasks. Lecture Notes in Computational Science and Engineering, 2016, , 113-140.	0.1	13
34	Adaptive Coarse Spaces for FETI-DP in Three Dimensions. SIAM Journal of Scientific Computing, 2016, 38, A2880-A2911.	1.3	41
35	Using Local Spectral Information in Domain Decomposition Methods – A Brief Overview in a Nutshell. Proceedings in Applied Mathematics and Mechanics, 2016, 16, 729-730.	0.2	0
36	Numerical modeling of fluid-structure interaction in arteries with anisotropic polyconvex hyperelastic and anisotropic viscoelastic material models at finite strains. International Journal for Numerical Methods in Biomedical Engineering, 2016, 32, e02756.	1.0	36

#	ARTICLE	IF	CITATIONS
37	Adaptive Coarse Spaces for BDDC with a Transformation of Basis. Lecture Notes in Computational Science and Engineering, 2016, , 301-309.	0.1	3
38	A Highly Scalable Implementation of Inexact Nonlinear FETI-DP Without Sparse Direct Solvers. Lecture Notes in Computational Science and Engineering, 2016, , 255-264.	0.1	5
39	Parallel Two-Level Overlapping Schwarz Methods in Fluid-Structure Interaction. Lecture Notes in Computational Science and Engineering, 2016, , 521-530.	0.1	4
40	A Nonlinear FETI-DP Method with an Inexact Coarse Problem. Lecture Notes in Computational Science and Engineering, 2016, , 41-52.	0.1	1
41	A Newton-Krylov-FETI-DP Method with an Adaptive Coarse Space Applied to Elastoplasticity. Lecture Notes in Computational Science and Engineering, 2016, , 293-300.	0.1	1
42	Toward Extremely Scalable Nonlinear Domain Decomposition Methods for Elliptic Partial Differential Equations. SIAM Journal of Scientific Computing, 2015, 37, C667-C696.	1.3	47
43	The approximate component mode synthesis special finite element method in two dimensions: Parallel implementation and numerical results. Journal of Computational and Applied Mathematics, 2015, 289, 116-133.	1.1	14
44	FETI-DP Methods with an Adaptive Coarse Space. SIAM Journal on Numerical Analysis, 2015, 53, 297-320.	1.1	57
45	Hybrid MPI/OpenMP Parallelization in FETI-DP Methods. Lecture Notes in Computational Science and Engineering, 2015, , 67-84.	0.1	3
46	On an Adaptive Coarse Space and on Nonlinear Domain Decomposition. Lecture Notes in Computational Science and Engineering, 2014, , 71-83.	0.1	9
47	Nonlinear FETI-DP and BDDC Methods. SIAM Journal of Scientific Computing, 2014, 36, A737-A765.	1.3	40
48	FETI-DP with different scalings for adaptive coarse spaces. Proceedings in Applied Mathematics and Mechanics, 2014, 14, 835-836.	0.2	6
49	Scalability of a FETI-DP Method for Optimal Control Problems. Proceedings in Applied Mathematics and Mechanics, 2014, 14, 837-838.	0.2	0
50	A Simultaneous Augmented Lagrange Approach for the Simulation of Soft Biological Tissue. Lecture Notes in Computational Science and Engineering, 2013, , 369-376.	0.1	1
51	FETI-DP for Elasticity with Almost Incompressible Material Components. Lecture Notes in Computational Science and Engineering, 2013, , 353-360.	0.1	0
52	Analysis of FETI-DP and BDDC for Linear Elasticity in 3D with Almost Incompressible Components and Varying Coefficients Inside Subdomains. SIAM Journal on Numerical Analysis, 2012, 50, 2208-2236.	1.1	16
53	Deflation, Projector Preconditioning, and Balancing in Iterative Substructuring Methods: Connections and New Results. SIAM Journal of Scientific Computing, 2012, 34, A459-A484.	1.3	29
54	Parallel Simulation of Biological Soft Tissue. Proceedings in Applied Mathematics and Mechanics, 2012, 12, 767-768.	0.2	0

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55	Projector preconditioning and transformation of basis in FETI-DP algorithms for contact problems. <i>Mathematics and Computers in Simulation</i> , 2012, 82, 1894-1907.	2.4	19
56	FETI-DP domain decomposition methods for elasticity with structural changes:P-elasticity. <i>ESAIM: Mathematical Modelling and Numerical Analysis</i> , 2011, 45, 563-602.	0.8	18
57	On the mechanical modeling of anisotropic biological soft tissue and iterative parallel solution strategies. <i>Archive of Applied Mechanics</i> , 2010, 80, 479-488.	1.2	20
58	Solving geometrically exact micromorphic elasticity with a staggered algorithm. <i>GAMM Mitteilungen</i> , 2010, 33, 57-72.	2.7	2
59	Parallel Iterative Substructuring in Structural Mechanics. <i>Archives of Computational Methods in Engineering</i> , 2009, 16, 425-463.	6.0	22
60	Numerical Simulations of Arterial Walls Based on IVUS-Data. <i>Proceedings in Applied Mathematics and Mechanics</i> , 2009, 9, 75-78.	0.2	2
61	FETI-DP for Anisotropic Problems. <i>Proceedings in Applied Mathematics and Mechanics</i> , 2008, 8, 10189-10190.	0.2	2
62	A hybrid approach to 3-level FETI. <i>Proceedings in Applied Mathematics and Mechanics</i> , 2008, 8, 10841-10843.	0.2	18
63	Spectral element FETI-DP and BDDC preconditioners with multi-element subdomains. <i>Computer Methods in Applied Mechanics and Engineering</i> , 2008, 198, 511-523.	3.4	37
64	Modelling and convergence in arterial wall simulations using a parallel FETI solution strategy. <i>Computer Methods in Biomechanics and Biomedical Engineering</i> , 2008, 11, 569-583.	0.9	43
65	An Analysis of a FETI-DP Algorithm on Irregular Subdomains in the Plane. <i>SIAM Journal on Numerical Analysis</i> , 2008, 46, 2484-2504.	1.1	85
66	Inexact FETI-DP methods. <i>International Journal for Numerical Methods in Engineering</i> , 2007, 69, 284-307.	1.5	64
67	Robust FETI-DP methods for heterogeneous three dimensional elasticity problems. <i>Computer Methods in Applied Mechanics and Engineering</i> , 2007, 196, 1400-1414.	3.4	85
68	Large-scale simulation of arterial walls: mechanical modeling. <i>Proceedings in Applied Mathematics and Mechanics</i> , 2007, 7, 4020017-4020018.	0.2	0
69	Dual-primal Iterative Substructuring for Almost Incompressible Elasticity. , 2007, , 397-404.		6
70	A Parallel Implementation of Dual-Primal FETI Methods for Three-Dimensional Linear Elasticity Using a Transformation of Basis. <i>SIAM Journal of Scientific Computing</i> , 2006, 28, 1886-1906.	1.3	63
71	Some Computational Results for Dual-Primal FETI Methods for Elliptic Problems in 3D. , 2005, , 361-368.		8
72	Multiscale coarse spaces for overlapping Schwarz methods based on the ACMS space in 2D. <i>Electronic Transactions on Numerical Analysis</i> , 0, 48, 156-182.	0.0	21

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73	Adaptive FETI-DP and BDDC methods with a generalized transformation of basis for heterogeneous problems. <i>Electronic Transactions on Numerical Analysis</i> , 0, 49, 1-27.	0.0	12
74	Nonlinear BDDC Methods with approximate solvers. <i>Electronic Transactions on Numerical Analysis</i> , 0, 49, 244-273.	0.0	8
75	Coarse spaces for FETI-DP and BDDC Methods for heterogeneous problems: connections of deflation and a generalized transformation-of-basis approach. <i>Electronic Transactions on Numerical Analysis</i> , 0, 52, 43-76.	0.0	4
76	Preconditioning the coarse problem of BDDC methods â€•three-level, algebraic multigrid, and vertex-based preconditioners. <i>Electronic Transactions on Numerical Analysis</i> , 0, 51, 432-450.	0.0	2
77	Globalization of Nonlinear FETI-DP Domain Decomposition Methods Using an SQP Approach. <i>Vietnam Journal of Mathematics</i> , 0, , .	0.4	0