Semyon Tsynkov

List of Publications by Year in descending order

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93	1,934	304743	289244
papers	citations	22 h-index	40 g-index

99	99	99	796
all docs	docs citations	times ranked	citing authors

#	Article	IF	Citations
1	A mathematical perspective on radar interferometry. Inverse Problems and Imaging, 2022, 16, 119.	1.1	4
2	Non-iterative domain decomposition for the Helmholtz equation with strong material discontinuities. Applied Numerical Mathematics, 2022, 173, 51-78.	2.1	4
3	Polarimetric radar interferometry in the presence of differential Faraday rotation. Inverse Problems, 2022, 38, 045010.	2.0	1
4	A high order compact time/space finite difference scheme for the 2D and 3D wave equation with a damping layer. Journal of Computational Physics, 2022, 460, 111161.	3.8	3
5	Deep Learning Approach to the Detection of Scattering Delay in Radar Images. Journal of Statistical Theory and Practice, 2021, 15, 1.	0.5	0
6	Divergence Measures and Detection Performance for Dispersive Targets in SAR. Radio Science, 2021, 56, .	1.6	1
7	Numerical Solution of 3D Exterior Unsteady Wave Propagation Problems Using Boundary Operators. SIAM Journal of Scientific Computing, 2020, 42, A3462-A3488.	2.8	5
8	Method of Difference Potentials for Evolution Equations with Lacunas. Computational Mathematics and Mathematical Physics, 2020, 60, 711-722.	0.8	4
9	Statistical characterization of scattering delay in synthetic aperture radar imaging. Inverse Problems and Imaging, 2020, 14, 511-533.	1.1	3
10	Detection of delayed target response in SAR. Inverse Problems, 2019, 35, 085005.	2.0	3
11	Preface to the Special Issue in Memory of Professor Saul Abarbanel. Journal of Scientific Computing, 2019, 81, 1119-1123.	2.3	0
12	Compact High Order Accurate Schemes for the Three Dimensional Wave Equation. Journal of Scientific Computing, 2019, 81, 1181-1209.	2.3	22
13	Direct implementation of high order BGT artificial boundary conditions. Journal of Computational Physics, 2019, 376, 98-128.	3.8	11
14	A method of boundary equations for unsteady hyperbolic problems in 3D. Journal of Computational Physics, 2018, 365, 294-323.	3.8	15
15	A High Order Compact Time/Space Finite Difference Scheme for the Wave Equation with Variable Speed of Sound. Journal of Scientific Computing, 2018, 76, 777-811.	2.3	30
16	Numerical solution of the wave equation with variable wave speed on nonconforming domains by high-order difference potentials. Journal of Computational Physics, 2018, 354, 26-42.	3.8	28
17	Cross-Channel Contamination of PolSAR Images due to Frequency Dependence of Faraday Rotation Angle. , 2018, , .		0
18	Differential Faraday Rotation and Polarimetric SAR. SIAM Journal on Applied Mathematics, 2018, 78, 1422-1449.	1.8	3

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19	High-order numerical solution of the Helmholtz equation for domains with reentrant corners. Applied Numerical Mathematics, 2017, 118, 87-116.	2.1	14
20	Non-deteriorating time domain numerical algorithms for Maxwell's electrodynamics. Journal of Computational Physics, 2017, 336, 1-35.	3.8	7
21	Mathematical analysis of SAR imaging through a turbulent ionosphere. AIP Conference Proceedings, 2017, , .	0.4	3
22	Modeling radar targets beyond the first Born approximation. Applied and Numerical Harmonic Analysis, 2017, , 311-371.	0.3	1
23	Inverse scattering off anisotropic targets. Applied and Numerical Harmonic Analysis, 2017, , 373-415.	0.3	0
24	The effect of ionospheric anisotropy. Applied and Numerical Harmonic Analysis, 2017, , 217-264.	0.3	0
25	Discussion and outstanding questions. Applied and Numerical Harmonic Analysis, 2017, , 417-431.	0.3	0
26	The start-stop approximation. Applied and Numerical Harmonic Analysis, 2017, , 265-309.	0.3	0
27	The effect of ionospheric turbulence. Applied and Numerical Harmonic Analysis, 2017, , 163-215.	0.3	0
28	Conventional SAR imaging. Applied and Numerical Harmonic Analysis, 2017, , 19-57.	0.3	0
29	A universal framework for non-deteriorating time-domain numerical algorithms in Maxwellâ€™s electrodynamics. AIP Conference Proceedings, 2016, , .	0.4	0
30	Solving the Helmholtz equation for general smooth geometry using simple grids. Wave Motion, 2016, 62, 75-97.	2.0	16
31	Computation of singular solutions to the Helmholtz equation with high order accuracy. Applied Numerical Mathematics, 2015, 93, 215-241.	2.1	14
32	A Mathematical Model for SAR Imaging beyond the First Born Approximation. SIAM Journal on Imaging Sciences, 2015, 8, 186-225.	2.2	16
33	Viktor Solomonovich Ryaben'kii and his school (on his 90th birthday). Russian Mathematical Surveys, 2015, 70, 1183-1210.	0.6	2
34	Single-polarization SAR imaging in the presence of Faraday rotation. Inverse Problems, 2014, 30, 075002.	2.0	7
35	High order numerical simulation of the transmission and scattering of waves using the method of difference potentials. Journal of Computational Physics, 2013, 243, 305-322.	3.8	24
36	Compact 2D and 3D sixth order schemes for the Helmholtz equation with variable wave number. Journal of Computational Physics, 2013, 232, 272-287.	3.8	114

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37	Discrete Calderonâ€™s projections on parallelepipeds and their application to computing exterior magnetic fields for FRC plasmas. Journal of Computational Physics, 2013, 234, 172-198.	3.8	10
38	Reduction of ionospheric distortions for spaceborne synthetic aperture radar with the help of image registration. Inverse Problems, 2013, 29, 054005.	2.0	17
39	A High-Order Numerical Method for the Helmholtz Equation with Nonstandard Boundary Conditions. SIAM Journal of Scientific Computing, 2013, 35, A2255-A2292.	2.8	28
40	A linearized inverse scattering problem for the polarized waves and anisotropic targets. Inverse Problems, 2012, 28, 085009.	2.0	5
41	The Method of Difference Potentials for the Helmholtz Equation Using Compact High Order Schemes. Journal of Scientific Computing, 2012, 53, 150-193.	2.3	49
42	A non-deteriorating algorithm for computational electromagnetism based on quasi-lacunae of Maxwellâ€™s equations. Journal of Computational Physics, 2012, 231, 558-585.	3.8	9
43	Quasi-Lacunae of Maxwell's Equations. SIAM Journal on Applied Mathematics, 2011, 71, 1109-1122.	1.8	10
44	Dual Carrier Probing for Spaceborne SAR Imaging. SIAM Journal on Imaging Sciences, 2011, 4, 501-542.	2.2	13
45	Numerical Simulation of Time-Harmonic Waves in Inhomogeneous Media using Compact High Order Schemes. Communications in Computational Physics, 2011, 9, 520-541.	1.7	43
46	A Compact Fourth Order Scheme for the Helmholtz Equation in Polar Coordinates. Journal of Scientific Computing, 2010, 45, 26-47.	2.3	38
47	Experimental Validation of the Active Noise Control Methodology Based on Difference Potentials. AIAA Journal, 2009, 47, 874-884.	2.6	26
48	A high-order numerical method for the nonlinear Helmholtz equation in multidimensional layered media. Journal of Computational Physics, 2009, 228, 3789-3815.	3.8	21
49	Long-Time Performance of Unsplit PMLs with Explicit Second Order Schemes. Journal of Scientific Computing, 2009, 41, 1-12.	2.3	18
50	Active control of sound with variable degree of cancellation. Applied Mathematics Letters, 2009, 22, 1846-1851.	2.7	17
51	Difference problem of noise suppression and other problems of active control of single-frequency sound on a composite domain. Doklady Mathematics, 2009, 79, 240-242.	0.6	3
52	On the Use of Start-Stop Approximation for Spaceborne SAR Imaging. SIAM Journal on Imaging Sciences, 2009, 2, 646-669.	2.2	22
53	On SAR Imaging through the Earth's Ionosphere. SIAM Journal on Imaging Sciences, 2009, 2, 140-182.	2.2	26
54	Lacunae based stabilization of PMLs. Journal of Computational Physics, 2008, 227, 7322-7345.	3.8	14

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55	Simulations of the nonlinear Helmholtz equation: arrest of beam collapse, nonparaxial solitons and counter-propagating beams. Optics Express, 2008, 16, 13323.	3.4	19
56	Numerical Solution of the Nonlinear Helmholtz Equation. Numerical Insights, 2008, , 37-62.	0.0	0
57	Active Control of Sound for Composite Regions. SIAM Journal on Applied Mathematics, 2007, 67, 1582-1609.	1.8	24
58	Weak Lacunae of Electromagnetic Waves in Dilute Plasma. SIAM Journal on Applied Mathematics, 2007, 67, 1548-1581.	1.8	3
59	High-order numerical solution of the nonlinear Helmholtz equation with axial symmetry. Journal of Computational and Applied Mathematics, 2007, 204, 477-492.	2.0	8
60	High-order numerical method for the nonlinear Helmholtz equation with material discontinuities in one space dimension. Journal of Computational Physics, 2007, 227, 820-850.	3.8	24
61	Inverse source problem and active shielding for composite domains. Applied Mathematics Letters, 2007, 20, 511-515.	2.7	33
62	The problem of active noise shielding in composite domains. Doklady Mathematics, 2006, 74, 812-814.	0.6	5
63	Numerical solution of the nonlinear Helmholtz equation using nonorthogonal expansions. Journal of Computational Physics, 2005, 210, 183-224.	3.8	32
64	Quadratic optimization in the problems of active control of sound. Applied Numerical Mathematics, 2005, 52, 381-400.	2.1	19
65	Optimization of power in the problems of active control of sound. Mathematics and Computers in Simulation, 2004, 65, 323-335.	4.4	17
66	On the application of lacunae-based methods to Maxwell's equations. Journal of Computational Physics, 2004, 199, 126-149.	3.8	14
67	On the Definition of Surface Potentials for Finite-Difference Operators. Journal of Scientific Computing, 2003, 18, 155-189.	2.3	35
68	Artificial boundary conditions for the numerical simulation of unsteady acoustic waves. Journal of Computational Physics, 2003, 189, 626-650.	3.8	21
69	Backscattering and Nonparaxiality Arrest Collapse of Damped Nonlinear Waves. SIAM Journal on Applied Mathematics, 2003, 63, 1718-1736.	1.8	12
70	Optimization of Acoustic Source Strength in the Problems of Active Noise Control. SIAM Journal on Applied Mathematics, 2003, 63, 1141-1183.	1.8	28
71	Optimization in the Context of Active Control of Sound. Lecture Notes in Computer Science, 2003, , 801-810.	1.3	1
72	On the Results of the Application of the Method of Difference Potentials to the Construction of Artificial Boundary Conditions for External Flow Computations. Springer Series in Computational Mathematics, 2002, , 403-441.	0.2	0

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73	On the combined performance of nonlocal artificial boundary conditions with the new generation of advanced multigrid flow solvers. Computers and Fluids, 2002, 31, 269-308.	2.5	5
74	Computation of Nonlinear Backscattering Using a High-Order Numerical Method. Journal of Scientific Computing, 2002, 17, 351-364.	2.3	9
75	Active Shielding and Control of Noise. SIAM Journal on Applied Mathematics, 2001, 62, 563-596.	1.8	43
76	Long-time numerical computation of wave-type solutions driven by moving sources. Applied Numerical Mathematics, 2001, 38, 187-222.	2.1	18
77	High-Order Two-Way Artificial Boundary Conditions for Nonlinear Wave Propagation with Backscattering. Journal of Computational Physics, 2001, 171, 632-677.	3.8	32
78	Global Discrete Artificial Boundary Conditions for Time-Dependent Wave Propagation. Journal of Computational Physics, 2001, 174, 712-758.	3.8	37
79	Global Artificial Boundary Conditions for Computation of External Flows with Jets. AIAA Journal, 2000, 38, 2014-2022.	2.6	7
80	Global artificial boundary conditions for computation of external flows with jets. AIAA Journal, 2000, 38, 2014-2022.	2.6	0
81	Global artificial boundary conditions for computation of external flow problems with propulsive jets. , 1999, , .		2
82	External Boundary Conditions for Three-Dimensional Problems of Computational Aerodynamics. SIAM Journal of Scientific Computing, 1999, 21, 166-206.	2.8	17
83	Numerical solution of problems on unbounded domains. A review. Applied Numerical Mathematics, 1998, 27, 465-532.	2.1	507
84	Improved Treatment of External Boundary Conditions for Three-Dimensional Flow Computations. AIAA Journal, 1998, 36, 1998-2004.	2.6	12
85	Artificial Boundary Conditions for Infinite-Domain Problems. ICASE/LaRC Interdisciplinary Series in Science and Engineering, 1998, , 119-137.	0.1	3
86	On the Combined Implementation of Global Boundary Conditions with Central Difference Multigrid Flow Solvers. Fluid Mechanics and Its Applications, 1998, , 285-294.	0.2	3
87	AN APPLICATION OF THE DIFFERENCE POTENTIALS METHOD TO SOLVING EXTERNAL PROBLEMS IN CFD. , 1998, , 169-205.		8
88	Artificial Boundary Conditions for Computation of Oscillating External Flows. SIAM Journal of Scientific Computing, 1997, 18, 1612-1656.	2.8	6
89	External flow computations using global boundary conditions. AIAA Journal, 1996, 34, 700-706.	2.6	29
90	An Application of Nonlocal External Conditions to Viscous Flow Computations. Journal of Computational Physics, 1995, 116, 212-225.	3.8	25

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91	An effective numerical technique for solving a special class of ordinary difference equations. Applied Numerical Mathematics, 1995, 18, 489-501.	2.1	11
92	Artificial Boundary Conditions for the Numerical Solution of External Viscous Flow Problems. SIAM Journal on Numerical Analysis, 1995, 32, 1355-1389.	2.3	43
93	A Theoretical Introduction to Numerical Analysis. , 0, , .		71