Otmar Scherzer

List of Publications by Year
in descending order

135 papers	3,782 citations	201385 27 h-index	168136 53 g-index
141 all docs	141 docs citations	141 times ranked	1554 citing authors

#	Article	IF	Citations
1	Convergence Rates of First- and Higher-Order Dynamics for Solving Linear Ill-Posed Problems. Foundations of Computational Mathematics, 2022, 22, 1567-1629.	1.5	8
2	Computed Origami Tomography. SIAM Review, 2022, 64, 469-484.	4.2	1
3	A workflow for sizing oligomeric biomolecules based on cryo single molecule localization microscopy. PLoS ONE, 2021, 16, e0245693.	1.1	3
4	Challenges for Optical Flow Estimates in Elastography. Lecture Notes in Computer Science, 2021, , 128-139.	1.0	2
5	The Tangential Cone Condition for Some Coefficient Identification Model Problems in Parabolic PDEs. , 2021, , 121-163.		4
6	Reciprocity-gap misfit functional for distributed acoustic sensing, combining data from passive and active sources. Geophysics, 2021, 86, R211-R220.	1.4	9
7	Fourier reconstruction for diffraction tomography of an object rotated into arbitrary orientations. Inverse Problems, 2021, 37, 115002.	1.0	7
8	Preconditioning inverse problems for hyperbolic equations with applications to photoacoustic tomography. Inverse Problems, 2020, 36, 014002.	1.0	4
9	Critical Yield Numbers and Limiting Yield Surfaces of Particle Arrays Settling in a Bingham Fluid. Applied Mathematics and Optimization, 2020, 82, 399-432.	0.8	2
10	Adjoint-state method for Hybridizable Discontinuous Galerkin discretization, application to the inverse acoustic wave problem. Computer Methods in Applied Mechanics and Engineering, 2020, 372, 113406.	3.4	10
11	Asymptotic Expansions for Higher Order Elliptic Equations with an Application to Quantitative Photoacoustic Tomography. SIAM Journal on Imaging Sciences, 2020, 13, 1781-1833.	1.3	3
12	Motion reconstruction for optical tomography of trapped objects. Inverse Problems, 2020, 36, 044004.	1.0	4
13	Eigenvector models for solving the seismic inverse problem for the Helmholtz equation. Geophysical Journal International, 2020, 221, 394-414.	1.0	9
14	Displacement field estimation from OCT images utilizing speckle information with applications in quantitative elastography. Inverse Problems, 2020, 36, 124003.	1.0	4
15	Data driven regularization by projection. Inverse Problems, 2020, 36, 125009.	1.0	10
16	Regularization with metric double integrals for vector tomography. Journal of Inverse and Ill-Posed Problems, 2020, 28, 857-875.	0.5	2
17	Diffusion tensor regularization with metric double integrals. Journal of Inverse and Ill-Posed Problems, 2020, .	0.5	0
18	Regularization with Metric Double Integrals of Functions with Values in a Set of Vectors. Journal of Mathematical Imaging and Vision, 2019, 61, 824-848.	0.8	3

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19	Invariant φ-Minimal Sets and Total Variation Denoising on Graphs. SIAM Journal on Imaging Sciences, 2019, 12, 1643-1668.	1.3	2
20	Preservation of Piecewise Constancy under TV Regularization with Rectilinear Anisotropy. Lecture Notes in Computer Science, 2019, , 510-521.	1.0	2
21	Quantitative photoacoustic imaging in the acoustic regime using SPIM. Inverse Problems, 2018, 34, 054003.	1.0	3
22	A note on convergence of solutions of total variation regularized linear inverse problems. Inverse Problems, 2018, 34, 055011.	1.0	10
23	The inverse scattering problem for orthotropic media in polarization-sensitive optical coherence tomography. GEM - International Journal on Geomathematics, 2018, 9, 145-165.	0.7	3
24	Reconstruction formulas for photoacoustic imaging in attenuating media. Inverse Problems, 2018, 34, 015006.	1.0	3
25	Shape-Aware Matching of Implicit Surfaces Based on Thin Shell Energies. Foundations of Computational Mathematics, 2018, 18, 891-927.	1.5	9
26	A Range Condition for Polyconvex Variational Regularization. Numerical Functional Analysis and Optimization, 2018, 39, 1064-1076.	0.6	0
27	LamÃ© Parameter Estimation from Static Displacement Field Measurements in the Framework of Nonlinear Inverse Problems. SIAM Journal on Imaging Sciences, 2018, 11, 1268-1293.	1.3	18
28	The first 100 years of the Radon transform. Inverse Problems, 2018, 34, 090201.	1.0	4
29	Photoacoustic tomography with spatially varying compressibility and density. Journal of Inverse and Ill-Posed Problems, 2017, 25, 119-133.	0.5	2
30	Critical Yield Numbers of Rigid Particles Settling in Bingham Fluids and Cheeger Sets. SIAM Journal on Applied Mathematics, 2017, 77, 638-663.	0.8	9
31	Singular values of the attenuated photoacoustic imaging operator. Journal of Differential Equations, 2017, 263, 5330-5376.	1.1	7
32	Convergence rates for regularization functionals with polyconvex integrands. Inverse Problems, 2017, 33, 085008.	1.0	2
33	Inverse problems of combined photoacoustic and optical coherence tomography. Mathematical Methods in the Applied Sciences, 2017, 40, 505-522.	1.2	10
34	Convergence of Tikhonov regularization for solving ill--posed operator equations with solutions defined on surfaces. Inverse Problems and Imaging, 2017, 11, 221-246.	0.6	2
35	Optical flow on evolving sphere-like surfaces. Inverse Problems and Imaging, 2017, 11, 305-338.	0.6	4
36	Nonlinear Flows for Displacement Correction and Applications in Tomography. Lecture Notes in Computer Science, 2017, , 283-294.	1.0	0

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37	On a spatial-temporal decomposition of optical flow. Inverse Problems and Imaging, 2017, 11, 761-781.	0.6	0
38	Modeling polarization-sensitive OCT using inverse scattering techniques. , 2017, , .		0
39	Inverse Boundary Value Problem For The Helmholtz Equation: Quantitative Conditional Lipschitz Stability Estimates. SIAM Journal on Mathematical Analysis, 2016, 48, 3962-3983.	0.9	20
40	6. A variational method for quantitative photoacoustic tomography with piecewise constant coefficients. , 2016, , 202-224.		1
41	On the X-ray transform of planar symmetric 2-tensors. Journal of Mathematical Analysis and Applications, 2016, 442, 31-49.	0.5	13
42	A direct method for photoacoustic tomography with inhomogeneous sound speed. Inverse Problems, 2016, 32, 045005.	1.0	49
43	Nonequispaced grid sampling in photoacoustics with a nonuniform fast Fourier transform. Journal of Biomedical Optics, 2016, 21, 015005.	1.4	9
44	The Inverse Scattering Problem in Optical Coherence Tomography. , 2016, , .		1
45	Generalized Convergence Rates Results for Linear Inverse Problems in Hilbert Spaces. Numerical Functional Analysis and Optimization, 2015, 36, 549-566.	0.6	14
46	Texture Generation for Photoacoustic Elastography. Journal of Mathematical Imaging and Vision, 2015, 52, 369-384.	0.8	5
47	Optical Flow on Evolving Surfaces with Space and Time Regularisation. Journal of Mathematical Imaging and Vision, 2015, 52, 55-70.	0.8	10
48	Finite-dimensional approximation of convex regularization via hexagonal pixel grids. Applicable Analysis, 2015, 94, 612-636.	0.6	4
49	Stability in the linearized problem of quantitative elastography. Inverse Problems, 2015, 31, 035005.	1.0	16
50	An analysis of a multi-level projected steepest descent iteration for nonlinear inverse problems in Banach spaces subject to stability constraints. Numerische Mathematik, 2015, 129, 127-148.	0.9	26
51	Mathematical Methods of Optical Coherence Tomography. , 2015, , 1169-1204.		9
52	Tomography, Photoacoustic, and Thermoacoustic. , 2015, , 1488-1496.		2
53	Sparsity in Inverse Geophysical Problems. , 2015, , 1659-1687.		1
54	Exact solutions of one-dimensional total generalized variation. Communications in Mathematical Sciences, 2015, 13, 171-202.	0.5	12

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55	Infinite Dimensional Optimization Models and PDEs for Dejittering. Lecture Notes in Computer Science, 2015, , 678-689.	1.0	4
56	The effect of cinematic cuts on human attention. , 2014, , .		10
57	Derivatives of isogeometric functions on n-dimensional rational patches in <mml:math altimg="si1.gif" overflow="scroll" xmlns:xocs="http://www.elsevier.com/xml/xocs/dtd" xmlns:xs="http://www.w3.org/2001/XMLSchema" xmlns:xsi="http://www.w3.org/2001/XMLSchema-instance" xmlns="http://www.elsevier.com/xml/ja/dtd" xmlns:ja="http://www.elsevier.com/xml/ja/dtd" xmlns:mml="http://www.w3.org/1998/Math/MathML" xmlns:tb="http://www.elsevier.com/xml/common/table/dtd" xmlns:sb="http://www.elsevier.com/xml/common	0.5	6
58	Decomposition of optical flow on the sphere. GEM - International Journal on Geomathematics, 2014, 5, 117-141.	0.7	11
59	A variational algorithm for the detection of line segments. Inverse Problems and Imaging, 2014, 8, 389-408.	0.6	9
60	The Levenberg–Marquardt iteration for numerical inversion of the power density operator. Journal of Inverse and Ill-Posed Problems, 2013, 21, .	0.5	26
61	Photoacoustic imaging in attenuating acoustic media based on strongly causal models. Mathematical Methods in the Applied Sciences, 2013, 36, 2254-2264.	1.2	8
62	Optical Flow on Evolving Surfaces with an Application to the Analysis of 4D Microscopy Data. Lecture Notes in Computer Science, 2013, , 246-257.	1.0	8
63	Shape spaces via medial axis transforms for segmentation of complex geometry in 3D voxel data. Inverse Problems and Imaging, 2013, 7, 1-25.	0.6	2
64	An approach to the minimization of the Mumford–Shah functional using $Gamma$-convergence and topological asymptotic expansion. Interfaces and Free Boundaries, 2013, 15, 141-166.	0.2	7
65	Sparsity in Inverse Geophysical Problems. , 2013, , 1-25.		0
66	Scale and Edge Detection with Topological Derivatives. Lecture Notes in Computer Science, 2013, , 404-415.	1.0	0
67	Reconstruction formulas for photoacoustic sectional imaging. Inverse Problems, 2012, 28, 045004.	1.0	16
68	Convergence of variational regularization methods for imaging on Riemannian manifolds. Inverse Problems, 2012, 28, 015007.	1.0	1
69	Simultaneous Reconstructions of Absorption Density and Wave Speed with Photoacoustic Measurements. SIAM Journal on Applied Mathematics, 2012, 72, 1508-1523.	0.8	31
70	Shape Reconstruction with A Priori Knowledge Based on Integral Invariants. SIAM Journal on Imaging Sciences, 2012, 5, 726-745.	1.3	7
71	Hybrid tomography for conductivity imaging. Inverse Problems, 2012, 28, 084008.	1.0	49
72	Local analysis of inverse problems: Hölder stability and iterative reconstruction. Inverse Problems, 2012, 28, 045001.	1.0	53

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73	Attenuation Models in Photoacoustics. Lecture Notes in Mathematics, 2012, , 85-130.	0.1	19
74	Analytical Evaluations of Double Integral Expressions Related to Total Variation. Texts and Monographs in Symbolic Computation, 2012, , 193-218.	0.4	1
75	The residual method for regularizing ill-posed problems. Applied Mathematics and Computation, 2011, 218, 2693-2710.	1.4	31
76	Partial Differential Equations for Zooming, Deinterlacing andÂDejittering. International Journal of Computer Vision, 2011, 92, 162-176.	10.9	12
77	Causality analysis of frequency-dependent wave attenuation. Mathematical Methods in the Applied Sciences, 2011, 34, 108-124.	1.2	18
78	Necessary and sufficient conditions for linear convergence of â„“1-regularization. Communications on Pure and Applied Mathematics, 2011, 64, 161-182.	1.2	88
79	On the use of frequency-domain reconstruction algorithms for photoacoustic imaging. Journal of Biomedical Optics, 2011, 16, 086002.	1.4	19
80	Regularization of ill-posed linear equations by the non- stationary augmented Lagrangian method. Journal of Integral Equations and Applications, 2010, 22, .	0.2	29
81	A Combinatorial Method for Topology Adaptations in 3D Deformable Models. International Journal of Computer Vision, 2010, 87, 304-315.	10.9	2
82	The CMA-ES on Riemannian Manifolds to Reconstruct Shapes in 3-D Voxel Images. IEEE Transactions on Evolutionary Computation, 2010, 14, 227-245.	7.5	22
83	Exact reconstruction in photoacoustic tomography with circular integrating detectors II: Spherical geometry. Mathematical Methods in the Applied Sciences, 2010, 33, 1771-1782.	1.2	12
84	Discretization of variational regularization in Banach spaces. Inverse Problems, 2010, 26, 105017.	1.0	19
85	Evolution by Non-Convex Functionals. Numerical Functional Analysis and Optimization, 2010, 31, 489-517.	0.6	1
86	Sparsity in Inverse Geophysical Problems. , 2010, , 763-784.		5
87	A variational setting for volume constrained image registration. Inverse Problems and Imaging, 2010, 4, 505-522.	0.6	10
88	Circular integrating detectors in photo and thermoacoustic tomography. Inverse Problems in Science and Engineering, 2009, 17, 133-142.	1.2	16
89	A Reconstruction Algorithm for Photoacoustic Imaging Based on the Nonuniform FFT. IEEE Transactions on Medical Imaging, 2009, 28, 1727-1735.	5.4	39
90	Shape Metrics Based on Elastic Deformations. Journal of Mathematical Imaging and Vision, 2009, 35, 86-102.	0.8	47

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91	A Geometric PDE for Interpolation of M-Channel Data. Lecture Notes in Computer Science, 2009, , 413-425.	1.0	6
92	On a Decomposition Model for Optical Flow. Lecture Notes in Computer Science, 2009, , 126-139.	1.0	5
93	Exact series reconstruction in photoacoustic tomography with circular integrating detectors. Communications in Mathematical Sciences, 2009, 7, 665-678.	0.5	15
94	Regularized Reconstruction of Shapes with Statistical aÂprioriÂKnowledge. International Journal of Computer Vision, 2008, 79, 119-135.	10.9	7
95	Dual evolution of planar parametric spline curves and -spline level sets. CAD Computer Aided Design, 2008, 40, 13-24.	1.4	10
96	Impedance-Acoustic Tomography. SIAM Journal on Applied Mathematics, 2008, 69, 565-576.	0.8	85
97	Sparse regularization with l^q penalty term. Inverse Problems, 2008, 24, 055020.	1.0	132
98	Identifiability and reconstruction of shapes from integral invariants. Inverse Problems and Imaging, 2008, 2, 341-354.	0.6	8
99	Detecting Interfaces in a Parabolicâ€Elliptic Problem from Surface Measurements. SIAM Journal on Numerical Analysis, 2007, 45, 810-836.	1.1	20
100	Segmenting surfaces of arbitrary topology: a two-step approach. , 2007, , .		3
101	Application of Non-Convex BV Regularization for Image Segmentation. Mathematics and Visualization, 2007, , 211-228.	0.4	1
102	THERMOACOUSTIC TOMOGRAPHY AND THE CIRCULAR RADON TRANSFORM: EXACT INVERSION FORMULA. Mathematical Models and Methods in Applied Sciences, 2007, 17, 635-655.	1.7	78
103	Bivariate density estimation using BV regularisation. Computational Statistics and Data Analysis, 2007, 51, 5622-5634.	0.7	7
104	Error estimates for non-quadratic regularization and the relation to enhancement. Inverse Problems, 2006, 22, 801-814.	1.0	96
105	Symbolic Computation for Moments and Filter Coefficients of Scaling Functions. Annals of Combinatorics, 2005, 9, 223-243.	0.3	6
106	Analysis of Iterative Methods for Solving a Ginzburg-Landau Equation. International Journal of Computer Vision, 2005, 64, 203-219.	10.9	12
107	Taut-String Algorithm and Regularization Programs with G-Norm Data Fit. Journal of Mathematical Imaging and Vision, 2005, 23, 135-143.	0.8	6
108	A Non-convex PDE Scale Space. Lecture Notes in Computer Science, 2005, , 303-315.	1.0	4

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109	Thermoacoustic tomography with integrating area and line detectors. IEEE Transactions on Ultrasonics, Ferroelectrics, and Frequency Control, 2005, 52, 1577-1583.	1.7	100
110	Tube Methods for BV Regularization. Journal of Mathematical Imaging and Vision, 2003, 19, 219-235.	0.8	37
111	Using the Complex Ginzburg-Landau Equation for Digital Inpainting in 2D and 3D. Lecture Notes in Computer Science, 2003, , 225-236.	1.0	44
112	Scale-Space Methods and Regularization for Denoising and Inverse Problems. Advances in Imaging and Electron Physics, 2003, 128, 445-530.	0.1	13
113	Wavelets with Scale Dependent Properties. Lecture Notes in Computer Science, 2003, , 255-265.	1.0	2
114	A Fast and Robust Algorithm for 2D/3D Panorama Ultrasound Data. Real Time Imaging, 2002, 8, 53-60.	1.6	7
115	Inverse Problems Light: Numerical Differentiation. American Mathematical Monthly, 2001, 108, 512-521.	0.2	140
116	Regularization Methods for Blind Deconvolution and Blind Source Separation Problems. Mathematics of Control, Signals, and Systems, 2001, 14, 358-383.	1.4	17
117	A posteriori error estimates for the solution of nonlinear ill-posed operator equations. Nonlinear Analysis: Theory, Methods & Applications, 2001, 45, 459-481.	0.6	12
118	Fast Parallel Algorithms for a Broad Class of Nonlinear Variational Diffusion Approaches. Real Time Imaging, 2001, 7, 31-45.	1.6	13
119	The Construction of Orthonormal Wavelets Using Symbolic Methods and a Matrix Analytical Approach for Wavelets on the Interval. Experimental Mathematics, 2001, 10, 67-86.	0.5	18
120	Inverse Problems Light: Numerical Differentiation. American Mathematical Monthly, 2001, 108, 512.	0.2	133
121	Scale-Space Properties of Nonstationary Iterative Regularization Methods. Journal of Visual Communication and Image Representation, 2000, 11, 96-114.	1.7	23
122	Relations Between Regularization and Diffusion Filtering. Journal of Mathematical Imaging and Vision, 2000, 12, 43-63.	0.8	121
123	An iterative multi level algorithm for solving nonlinear ill-posed problems. Numerische Mathematik, 1998, 80, 579-600.	0.9	30
124	Error Analysis of an Equation Error Method for the Identification of the Diffusion Coefficient in a Quasi-linear Parabolic Differential Equation. SIAM Journal on Applied Mathematics, 1998, 59, 1012-1027.	0.8	47
125	Regularization for Curve Representations: Uniform Convergence for Discontinuous Solutions of Ill-Posed Problems. SIAM Journal on Applied Mathematics, 1998, 58, 1891-1900.	0.8	18
126	A multi-level algorithm for the solution of moment problems. Numerical Functional Analysis and Optimization, 1998, 19, 353-375.	0.6	9

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127	A convergence analysis of iterative methods for the solution of nonlinear ill-posed problems under affinely invariant conditions. Inverse Problems, 1998, 14, 1081-1106.	1.0	113
128	Local ill-posedness and source conditions of operator equations in Hilbert spaces. Inverse Problems, 1998, 14, 1189-1206.	1.0	34
129	On convergence rates for the iteratively regularized Gauss-newton method. IMA Journal of Numerical Analysis, 1997, 17, 421-436.	1.5	216
130	Stable Approximations of a Minimal Surface Problem with Variational Inequalities. Abstract and Applied Analysis, 1997, 2, 137-161.	0.3	4
131	<title>Reconstruction of discontinuous solutions from blurred data</title>. , 1997, , .		3
132	Analysis of regularized total variation penalty methods for denoising. Inverse Problems, 1996, 12, 601-617.	1.0	46
133	A convergence analysis of the Landweber iteration for nonlinear ill-posed problems. Numerische Mathematik, 1995, 72, 21-37.	0.9	492
134	The Use of Tikhonov Regularization in the Identification of Electrical Conductivities from Overdetermined Boundary Data. Resultate Der Mathematik, 1992, 22, 598-618.	0.2	11
135	Finite-dimensional approximation of tikhonov regularized solutions of non-linear ill-posed problems. Numerical Functional Analysis and Optimization, 1990, 11, 85-99.	0.6	51