

My full list of publications and pdf versions of the articles are available at <http://users.jyu.fi/~salomi/pub/>. As of August 26, 2024 there are 121 publications including 7 preprints, 1 monograph, 89 refereed articles in international journals, 13 refereed articles in conference proceedings, 4 book chapters, and 7 other articles. The 10 most important publications are marked in bold with a star.

Submitted articles :

1. P.-Z. Kow, M. Salo and S. Zou, Increasing resolution and instability for linear inverse scattering problems.
2. K. Krupchyk, S. Ma, S. Sahoo, M. Salo, S. St-Amant, Inverse problems for semilinear Schrödinger equations at large frequency via polynomial resolvent estimates on manifolds.
3. D. Johansson, J. Nurminen and M. Salo, Inverse problems for general semilinear elliptic PDE with a general nonlinearity $a(x,u)$.
4. **(*) M. Mazzucchelli, M. Salo, and L. Tzou, A general support theorem for analytic double fibration transforms.**
5. S. Ma, M. Salo, and S. Sahoo, The anisotropic Calderón problem at large fixed frequency on manifolds with invertible ray transform.
6. M. Lassas, L. Oksanen, M. Salo, and A. Tetlow, Inverse problems for non-linear Schrödinger equations with time-dependent coefficients.
7. M. Salo, The Calderón problem and normal forms.

Scientific monographs :

8. **(*) G. Paternain, M. Salo, and G. Uhlmann, Geometric inverse problems, with emphasis on two dimensions.** Cambridge Studies in Advanced Mathematics, Cambridge University Press, 2023. Online version available at <http://users.jyu.fi/~salomi/pub/>.

Articles in refereed scientific journals :

9. T. Liimatainen and M. Salo, Applications of the Stone-Weierstrass theorem in the Calderón problem. *Annales Fennici Mathematici* (to appear).
10. P.-Z. Kow, M. Salo and H. Shahgholian, On scattering behavior of corner domains with anisotropic inhomogeneities. *SIAM Journal on Mathematical Analysis* 56 (2024), no. 4, 4834-4853.
11. G. Paternain and M. Salo, The non-Abelian X-ray transform on surfaces. *Journal of Differential Geometry* 126 (2024), no. 3, 1185-1205.
12. P.Z. Kow, M. Salo, H. Shahgholian, A minimization problem with free boundary and its application to inverse scattering problems. *Interfaces and Free Boundaries* 26 (2024), no. 3, 415-471.
13. **(*) L. Oksanen, M. Salo, P. Stefanov, G. Uhlmann, Inverse problems for real principal type operators.** *American Journal of Mathematics* 146 (2024), no. 1, 161-240.

14. P.-Z. Kow, S. Larson, M. Salo and H. Shahgholian, Quadrature domains for the Helmholtz equation with applications to non-scattering phenomena. *Potential Analysis* 60 (20204), 387-424.
15. G. Paternain and M. Salo, Carleman estimates for geodesic X-ray transforms. *Annales Scientifiques de l'ENS* 56 (2023), no. 5, 1339-1380.
16. G. Covi, M. de Hoop and M. Salo, Uniqueness in an inverse problem of fractional elasticity. *Proceedings of Royal Society A* 479 (2023), no. 2278, 20230474.
17. P.-Z. Kow, M. Salo and H. Shahgholian, On positivity sets of Helmholtz solutions. *Vietnam Journal of Mathematics* 51 (2023), no. 4, special issue dedicated to Carlos Kenig, 985-994.
18. S. Ma, M. Salo and L. Potenciano, Fixed angle inverse scattering for sound speeds close to constant. *SIAM Journal on Mathematical Analysis* 55 (2023), no. 4, 3420-3456.
19. S. Sahoo and M. Salo, The linearized Calderón problem for polyharmonic operators. *Journal of Differential Equations* 360 (2023), 407-451.
20. M. Salo and H. Schlüter, Jacobian of solutions to the conductivity equation in limited view. *Inverse Problems* 39 (2023), no. 2, 025001.
21. M. Salo and L. Tzou, Inverse problems for semilinear elliptic PDE with measurements at a single point. *Proceedings of AMS* 151 (2023), 2023-2030.
22. M. Lassas, M. Salo, and T. Liimatainen, The Calderón problem for the conformal Laplacian. *Communications in Analysis and Geometry* 30 (2022), no. 5, 1121-1184.
23. S. Lu, M. Salo, and B. Xu, Increasing stability in the linearized inverse Schrödinger potential problem with power type nonlinearities. *Inverse Problems* 38 (2022), no. 6, 065009.
24. K. Krupchyk, T. Liimatainen, and M. Salo, Linearized Calderón problem and exponentially accurate quasimodes for analytic manifolds. *Advances in Mathematics* 403 (2022), 108362.
25. S. Ma and M. Salo, Fixed angle inverse scattering in the presence of a Riemannian metric. *Journal of Inverse and Ill-posed Problems* 30 (2022), no. 4, 495-520.
26. T. Liimatainen, Y.-H. Lin, M. Salo, and T. Tyni, Inverse problems for elliptic equations with fractional power type nonlinearities. *Journal of Differential Equations* 306 (2022), 189-219.
27. (*) **H. Koch, A. Rüländ, M. Salo, On instability mechanisms for inverse problems.** *Ars Inveniendi Analytica* (2021), no. 7, 93 pp.
28. (*) **M. Salo, H. Shahgholian, Free boundary methods and non-scattering phenomena.** *Research in the Mathematical Sciences* 8 (2021), special issue "Transmission eigenvalues and related spectral problems in scattering theory", 58.
29. C. Meroño, L. Potenciano, and M. Salo, The fixed angle scattering problem with a first order perturbation. *Annales Henri Poincaré* 22 (2021), 3699-3746.
30. G. Paternain, M. Salo, A sharp stability estimate for tensor tomography in non-positive curvature. *Mathematische Zeitschrift* 298 (2021), 3699-3746.
31. M. Lassas, T. Liimatainen, Y.-H. Lin, M. Salo, Partial data inverse problems and simultaneous recovery of boundary and coefficients for semilinear elliptic equations. *Revista Matemática Iberoamericana* 37 (2021), no. 4, 1553-1580.
32. (*) **M. Lassas, T. Liimatainen, Y.-H. Lin, M. Salo, Inverse problems for elliptic equations with power type nonlinearities.** *Journal de Mathématiques Pures et Appliquées* 145 (2021), 44-82.

33. Rakesh, M. Salo, Fixed angle inverse scattering for almost symmetric or controlled perturbations. *SIAM Journal on Mathematical Analysis* 52 (2020), no. 6, 5467-5499.
34. D. Dos Santos Ferreira, Y. Kurylev, M. Lassas, T. Liimatainen, M. Salo, The linearized Calderón problem in transversally anisotropic geometries. *International Math. Research Notices* (2020), no. 22, 8729-8765.
35. P. Angulo, D. Faraco, L. Guíjarro, and M. Salo, Limiting Carleman weights and conformally transversally anisotropic manifolds. *Transactions of AMS* 373 (2020), 5171-7197.
36. M. Salo, Applications of microlocal analysis in inverse problems. *Mathematics* 8 (2020), no. 7, 1184.
37. T. Ghosh, A. Rüländ, M. Salo, and G. Uhlmann, Uniqueness and reconstruction for the fractional Calderón problem with a single measurement. *Journal of Functional Analysis* 279 (2020), 108505.
38. Rakesh, M. Salo, The fixed angle scattering problem and wave equation inverse problems with two measurements. *Inverse Problems* 36 (2020), 035005.
39. (*) **T. Ghosh, M. Salo, and G. Uhlmann, The Calderón problem for the fractional Schrödinger equation.** *Analysis & PDE* 13 (2020), no. 2, 455-475.
40. C. Meroño, L. Potenciano, and M. Salo, Resolvent estimates for the magnetic Schrödinger equation in dimension $n \geq 2$. *Revista Matemática Complutense* 33 (2020), 619-641.
41. M. Lassas, T. Liimatainen, and M. Salo, The Poisson embedding approach to the Calderón problem. *Mathematische Annalen* 377 (2020), 19-67.
42. A. Rüländ and M. Salo, The fractional Calderón problem: low regularity and stability. *Nonlinear Analysis* 193 (2020), special issue "Nonlocal and fractional phenomena", 111529.
43. A. Rüländ and M. Salo, Quantitative approximation properties for the fractional heat equation. *Math. Control Relat. Fields* 10 (2020), no. 1, 1-26.
44. J. Ilmavirta, J. Lehtonen, and M. Salo, Geodesic X-ray tomography for piecewise constant functions on nontrapping manifolds. *Math. Proceedings of the Cambridge Philosophical Society* 168 (2020), no. 1, 29-41.
45. G. Paternain, M. Salo, G. Uhlmann, H. Zhou, The geodesic X-ray transform with matrix weights. *American Journal of Mathematics* 141 (2019), 1707-1750.
46. B. Harrach, V. Pohjola, M. Salo, Dimension bounds in monotonicity methods for the Helmholtz equation. *SIAM J. Math. Anal.* 51 (2019), no. 4, 2995-3019.
47. C. Guillarmou, M. Salo, and L. Tzou, The linearized Calderón problem on complex manifolds. *Acta Mathematica Sinica* 35 (2019), special issue in honor of Carlos Kenig, no. 6, 1043-1056.
48. A. Rüländ and M. Salo, Quantitative Runge approximation and inverse problems. *International Mathematics Research Notices* (2019), no. 20, 6216-6234.
49. B. Harrach, M. Salo, and V. Pohjola, Monotonicity and local uniqueness for the Helmholtz equation. *Analysis & PDE* 12 (2019), no. 7, 1741-1771.
50. A. Rüländ and M. Salo, Exponential instability in the Calderón problem. *Inverse Problems* 34 (2018), no. 4, 045003.
51. T. Brander, B. Harrach, M. Kar, and M. Salo, Monotonicity and enclosure methods for the p-Laplace equation. *SIAM Journal on Applied Mathematics* 78 (2018), no. 2, 742-758.

52. J. Lehtonen, J. Railo, and M. Salo, Tensor tomography on Cartan-Hadamard manifolds. *Inverse Problems* 34 (2018), special issue: 100 years of the Radon transform, no. 4, 044004.
53. F. Chung, P. Ola, M. Salo, and L. Tzou, Partial data inverse problems for Maxwell equations via Carleman estimates. *Annales de l'Institut Henri Poincaré C* 35 (2018), no. 3, 605-624.
54. L. Päivärinta, M. Salo, and E. Vesalainen, Strictly convex corners scatter. *Revista Matemática Iberoamericana* 33 (2017), no. 4, 1369-1396.
55. V. Julin, T. Liimatainen, and M. Salo, p-harmonic coordinates for Hölder metrics and applications. *Communications in Analysis and Geometry* 25 (2017), no. 2, 395-430.
56. F. Chung, M. Salo, and L. Tzou, Partial data inverse problems for the Hodge Laplacian. *Analysis & PDE* 10 (2017), no. 1, 43-93.
57. C. Guo, M. Kar, and M. Salo, Inverse problems for p-Laplace type equations under monotonicity assumptions. *RIMUT* 48 (2016), special issue in honor of Giovanni Alessandrini, 79-99.
58. D. Dos Santos Ferreira, Y. Kurylev, M. Lassas, and M. Salo, The Calderón problem in transversally anisotropic geometries. *Journal of EMS* 18 (2016), no. 11, 2579-2626.
59. T. Liimatainen and M. Salo, Local gauge conditions for ellipticity in conformal geometry. *International Mathematics Research Notices* (2016), no. 13, 4058-4077.
60. J. Ilmavirta and M. Salo, Broken ray transform on a Riemann surface with a convex obstacle. *Communications in Analysis and Geometry* 24 (2016), no. 2, 379-408.
61. C. Guillarmou, G. Paternain, M. Salo, G. Uhlmann, The X-ray transform for connections in negative curvature. *Communications in Mathematical Physics* 343 (2016), no. 1, 83-127.
62. G. Hu, M. Salo, and E. Vesalainen, Shape identification in inverse medium scattering problems with a single far-field pattern. *SIAM Journal on Mathematical Analysis* 48 (2016), no. 1, 305-362.
63. G.P. Paternain, M. Salo, and G. Uhlmann, Invariant distributions, Beurling transforms and tensor tomography in higher dimensions. *Mathematische Annalen* 363 (2015), no. 1, 305-362.
64. T. Brander, M. Kar, and M. Salo, Enclosure method for the p-Laplace equation. *Inverse Problems* 31 (2015), 045001.
65. M. Lassas, M. Salo, and L. Tzou, Inverse problems and invisibility cloaking for FEM models and resistor networks. *Mathematical Models and Methods in Applied Sciences* 25 (2015), no. 2, 309-342.
66. G.P. Paternain, M. Salo, and G. Uhlmann, On the range of the attenuated ray transform for unitary connections. *International Mathematics Research Notices* 4 (2015), 873-897.
67. P. Caro and M. Salo, Stability of the Calderón problem in admissible geometries. *Inverse Problems and Imaging* 8 (2014), no. 4, 939-957.
68. T. Liimatainen and M. Salo, n-harmonic coordinates and the regularity of conformal mappings. *Mathematical Research Letters* 21 (2014), no. 2, 341-361.
69. G.P. Paternain, M. Salo, and G. Uhlmann, Spectral rigidity and invariant distributions on Anosov surfaces. *Journal of Differential Geometry* 98 (2014), no. 1, 147-181.
70. C.E. Kenig and M. Salo, Recent progress in the Calderón problem with partial data. *Contemporary Mathematics* 615 (2014), 193-222.

71. G.P. Paternain, M. Salo, and G. Uhlmann, Tensor tomography: progress and challenges. *Chinese Annals of Mathematics, Series B*, 35 (2014), no. 3, 399-428.
72. D. Dos Santos Ferreira, C.E. Kenig, and M. Salo, On L^p resolvent estimates for Laplace-Beltrami operators on compact manifolds. *Forum Mathematicum* 26 (2014), no. 3, 815-849.
73. C.E. Kenig and M. Salo, The Calderon problem with partial data on manifolds and applications. *Analysis & PDE* 6 (2013), no. 8, 2003-2048.
74. (*) **G.P. Paternain, M. Salo, and G. Uhlmann, Tensor tomography on surfaces.** *Inventiones Mathematicae* 193 (2013), no. 1, 229-247.
75. D. Dos Santos Ferreira, C.E. Kenig, and M. Salo, Determining an unbounded potential from Cauchy data in admissible geometries. *Communications in Partial Differential Equations* 38 (2013), no. 1, 50-68.
76. J. Chen, G. Zhao, E. Rahtu, M. Salo, and M. Pietikäinen, Automatic dynamic texture segmentation using local descriptors and optical flow. *IEEE Transactions in Image Processing* 22 (2013), no. 1, 326-339.
77. G.P. Paternain, M. Salo, and G. Uhlmann, The attenuated ray transform for connections and Higgs fields. *Geometric and Functional Analysis* 22 (2012), no. 5, 1460-1489.
78. T. Liimatainen and M. Salo, Nowhere conformally homogeneous manifolds and limiting Carleman weights. *Inverse Problems and Imaging* 6 (2012), no. 3, 523-530.
79. M. Salo and X. Zhong, An inverse problem for the p -Laplacian: boundary determination. *SIAM Journal on Mathematical Analysis* 44 (2012), no. 4, 2474-2495.
80. C.E. Kenig, M. Salo, and G. Uhlmann, Reconstructions from boundary measurements on admissible manifolds. *Inverse Problems and Imaging* 5 (2011), no. 4, 859-877.
81. M. Salo and G. Uhlmann, The attenuated ray transform on simple surfaces. *Journal of Differential Geometry* 88 (2011), no. 1, 161-187.
82. C. Guillarmou, M. Salo, and L. Tzou, Inverse scattering at fixed energy on surfaces with Euclidean ends. *Communications in Mathematical Physics* 303 (2011), no. 3, 761-784.
83. (*) **C.E. Kenig, M. Salo, and G. Uhlmann, Inverse problems for the anisotropic Maxwell equations.** *Duke Mathematical Journal* 157 (2011), no. 2, 369-419.
84. L. Päivärinta, M. Salo, and G. Uhlmann, Inverse scattering for the magnetic Schrödinger operator. *Journal of Functional Analysis* 259 (2010), no. 7, 1771-1798.
85. V. Brytik, M. de Hoop, and M. Salo, Sensitivity analysis of wave-equation tomography: a multi-scale approach. *Journal of Fourier Analysis and Applications* 16 (2010), no. 4, 544-589.
86. M. Salo and L. Tzou, Inverse problems with partial data for a Dirac system: a Carleman estimate approach. *Advances in Mathematics* 225 (2010), no. 1, 487-513.
87. P. Caro, P. Ola, and M. Salo, Inverse boundary value problem for Maxwell equations with local data. *Communications in Partial Differential Equations* 34 (2009), no. 11, 1425-1464.
88. (*) **D. Dos Santos Ferreira, C.E. Kenig, M. Salo, and G. Uhlmann, Limiting Carleman weights and anisotropic inverse problems.** *Inventiones Mathematicae* 178 (2009), no. 1, 119-171.
89. M. Salo and L. Tzou, Carleman estimates and inverse problems for Dirac operators. *Mathematische Annalen* 344 (2009), no. 1, 161-184.

90. M. Salo, Stability for solutions of wave equations with $C^{\{1,1\}}$ coefficients. *Inverse Problems and Imaging* 1 (2007), no. 3, 537-556.
91. K. Knudsen and M. Salo, Determining nonsmooth first order terms from partial boundary measurements. *Inverse Problems and Imaging* 1 (2007), no. 3, 537-556.
92. M. Salo, Semiclassical pseudodifferential calculus and the reconstruction of a magnetic field. *Communications in Partial Differential Equations* 31 (2006), no. 11, 1639-1666.
93. M. Salo and J.-N. Wang, Complex spherical waves and inverse problems in unbounded domains. *Inverse Problems* 22 (2006), no. 6, 2299-2309.
94. E. Rahtu, M. Salo, and J. Heikkilä, A new convexity measure based on a probabilistic interpretation of images. *IEEE Trans. Pattern Analysis and Machine Intelligence* 28 (2006), no. 9, 1501-1512.
95. R.M. Brown and M. Salo, Identifiability at the boundary for first-order terms. *Applicable Analysis* 85 (2006), no. 6-7, 735-749.
96. E. Rahtu, M. Salo, and J. Heikkilä, Affine invariant pattern recognition using Multiscale Autoconvolution. *IEEE Trans. Pattern Analysis and Machine Intelligence* 27 (2005), no. 6, 908-918.
97. M. Salo, Inverse problems for nonsmooth first order perturbations of the Laplacian. *Annales Academia Scientiarum Fennicae Mathematica, Dissertationes* 139 (2004), 67 pp.

Articles in refereed conference proceedings :

98. M. Salo, The fractional Calderón problem. *Journées équations aux dérivées partielles* (2017), Exp. No. 7, 8 p.
99. E. Rahtu, J. Kannala, M. Salo, and J. Heikkilä, Segmenting salient objects from images and videos. *Proc. European Conference on Computer Vision, ECCV 2010, Lecture Notes in Computer Science* 6315, 366-379.
100. E. Rahtu, M. Salo, and J. Heikkilä, Compressing sparse feature vectors using random ortho-projections. *Proc. International Conference on Pattern Recognition, ICPR 2010*, 1397-1400.
101. M. Salo, Inverse boundary value problems for the magnetic Schrödinger equation. *Proc. Inverse Problems in Applied Sciences - Towards Breakthrough (Sapporo 2006)*, J. Phys Conf. Series 73 (2007), 012020.
102. E. Rahtu, M. Salo, and J. Heikkilä, Affine registration using multiscale approach. *Proc. Finnish Signal Processing Symposium, FINSIG 2007*.
103. E. Rahtu, M. Salo, and J. Heikkilä, Nonlinear functionals in the construction of multiscale affine invariants. *Proc. Scandinavian Conference on Image Analysis, SCIA 2007*, 482-491.
104. E. Rahtu, M. Salo, and J. Heikkilä, Multiscale autoconvolution histograms for affine invariant pattern recognition. *Proc. British Machine Vision Conference, BMVC 2006*, vol. 3, 1059-1068.
105. E. Rahtu, M. Salo, and J. Heikkilä, A new affine invariant image transform based on ridgelets. *Proc. British Machine Vision Conference, BMVC 2006*, vol. 3, 1039-1048.
106. J. Kannala, M. Salo, and J. Heikkilä, Algorithms for computing a planar homography from conics in correspondence. *Proc. British Machine Vision Conference, BMVC 2006*, vol. 1, 77-86.

107. E. Rahtu, M. Salo, and J. Heikkilä, and J. Flusser, Generalized affine moment invariants for object recognition. *Proc. International Conference on Pattern Recognition, ICPR 2006*, vol. 2, 634-637.
108. E. Rahtu, M. Salo, and J. Heikkilä, A new efficient method for producing global affine invariants. *Proc. International Conference on Image Analysis and Processing, ICIAP 2005*, 407-414.
109. J. Kannala, E. Rahtu, M. Salo, and J. Heikkilä, A new method for affine registration of images and point sets. *Proc. Scandinavian Conference on Image Analysis, SCIA 2005*, 224-234.
110. E. Rahtu, M. Salo, and J. Heikkilä, Convexity recognition using Multi-Scale Autoconvolution. *Proc. International Conference on Pattern Recognition, ICPR 2004*, vol. 1, 692-695.

Chapters in books and other compilations :

111. M. Salo, On geometric inverse problems and microlocal analysis. Chapter to appear in *Microlocal Analysis and Inverse Problems in Tomography and Geometry* (edited by E. Quinto, P. Stefanov and G. Uhlmann), Radon Series on Computational and Applied Mathematics 30, De Gruyter.
112. M. Salo, Distributions and Fourier transform. Chapter to appear in the *Encyclopedia of Applied and Computational Mathematics*, edited by B. Engquist, Springer-Verlag.
113. M. Salo, The Calderón problem on Riemannian manifolds. Chapter in *Inverse Problems and Applications: Inside Out II* (edited by G. Uhlmann), MSRI Publications, Cambridge University Press, 2012.
114. M. Lassas, M. Salo, and G. Uhlmann, Wave phenomena. Chapter in the *Handbook of Mathematical Methods in Imaging*, edited by O. Scherzer, Springer-Verlag, 2011.

Other scientific works :

115. M. Salo, Rungen lause ja sovelluksia inversio-ongelmiin (in Finnish). *Arkhimedes* 3 (2018), 6-11.
116. M. Salo, On the work of Joonas Ilmavirta (translated in Polish). *Wiadomosci Matematyczne*, to appear.
117. M. Salo, Konformigeometrian mittaetoja (in Finnish). *Suomalaisen Tiedeakatemia vuosikirja* (2015).
118. M. Salo, Matka maapallon keskipisteeseen - Sädemuunnosten matematiikkaa (in Finnish). *Arkhimedes* 1-2 (2014), 12-18.
119. M. Salo, Töissä tiedeyhteisössä (in Finnish). Chapter in *Kirjeitä nuorelle tutkijalle (Letters to a young researcher)*, edited by M. Paso, Finnish Academy of Science and Letters, 2011.
120. M. Salo, Ihmisen uudet silmät – käännteisten ongelmien matematiikkaa (in Finnish). *Solmu* 3 (2011), 28-30.
121. M. Salo, Inversio-ongelmat – matematiikkaa ja sen sovelluksia (in Finnish). *Arkhimedes* 5 (2006), 20-25.