

My full list of publications and pdf versions of the articles are available at <http://users.jyu.fi/~salomi/pub/>. As of May 23, 2025 there are 126 publications including 7 preprints, 2 books, 93 refereed articles in international journals, 13 refereed articles in conference proceedings, 5 book chapters, and 6 other articles. The 10 most important publications are marked in bold with a star.

Submitted articles :

1. **(*) L. Oksanen, Rakesh, and M. Salo, Rigidity in the Lorentzian Calderón problem with formally determined data.**
2. L. Oksanen, Rakesh, and M. Salo, Fixed angle inverse scattering for Riemannian metrics.
3. D. Johansson, J. Nurminen and M. Salo, Inverse problems for semilinear elliptic equations with low regularity.
4. G. Covi, M. de Hoop, and M. Salo, Geometrical optics for the fractional Helmholtz equation and applications to inverse problems.
5. D. Johansson, J. Nurminen and M. Salo, Inverse problems for general semilinear elliptic PDE with a general nonlinearity $a(x,u)$.
6. M. Mazzucchelli, M. Salo, and L. Tzou, A general support theorem for analytic double fibration transforms.
7. M. Salo, The Calderón problem and normal forms.

Scientific books :

8. **(*) J. Feldman, M. Salo, and G. Uhlmann, The Calderón problem.** Graduate Studies in Mathematics, American Mathematical Society (to appear).
9. **(*) 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 :

10. M. Lassas, L. Oksanen, M. Salo, and A. Tetlow, Inverse problems for non-linear Schrödinger equations with time-dependent coefficients. *SIAM Journal on Mathematical Analysis* (to appear).
11. 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. *Pure and Applied Analysis* 7 (2025), no. 1, 65-100.
12. P.-Z. Kow, M. Salo and S. Zou, Increasing resolution and instability for linear inverse scattering problems. *Journal of Functional Analysis* 289 (2025), no. 1, 110923.

13. S. Ma, M. Salo, and S. Sahoo, The anisotropic Calderón problem at large fixed frequency on manifolds with invertible ray transform. *Journal of the London Mathematical Society* 110 (2004), no. 4, e13006.
14. T. Liimatainen and M. Salo, Applications of the Stone-Weierstrass theorem in the Calderón problem. *Annales Fennici Mathematici* (to appear).
15. 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.
16. G. Paternain and M. Salo, The non-Abelian X-ray transform on surfaces. *Journal of Differential Geometry* 126 (2024), no. 3, 1185-1205.
17. 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.
18. 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.
19. 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 (2024), 387-424.
20. G. Paternain and M. Salo, Carleman estimates for geodesic X-ray transforms. *Annales Scientifiques de l'ENS* 56 (2023), no. 5, 1339-1380.
21. 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.
22. 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.
23. 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.
24. S. Sahoo and M. Salo, The linearized Calderón problem for polyharmonic operators. *Journal of Differential Equations* 360 (2023), 407-451.
25. M. Salo and H. Schlüter, Jacobian of solutions to the conductivity equation in limited view. *Inverse Problems* 39 (2023), no. 2, 025001.
26. M. Salo and L. Tzou, Inverse problems for semilinear elliptic PDE with measurements at a single point. *Proceedings of AMS* 151 (2023), 2023-2030.
27. 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.
28. 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.
29. K. Krupchyk, T. Liimatainen, and M. Salo, Linearized Calderón problem and exponentially accurate quasimodes for analytic manifolds. *Advances in Mathematics* 403 (2022), 108362.
30. 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.
31. 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.

32. (*) **H. Koch, A. Rüland, M. Salo, On instability mechanisms for inverse problems.** *Ars Inveniendi Analytica* (2021), no. 7, 93 pp.
33. (*) **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.
34. C. Meroño, L. Potenciano, and M. Salo, The fixed angle scattering problem with a first order perturbation. *Annales Henri Poincaré* 22 (2021), 3699-3746.
35. G. Paternain, M. Salo, A sharp stability estimate for tensor tomography in non-positive curvature. *Mathematische Zeitschrift* 298 (2021), 3699-3746.
36. 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.
37. (*) **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.
38. Rakesh, M. Salo, Fixed angle inverse scattering for almost symmetric or controlled perturbations. *SIAM Journal on Mathematical Analysis* 52 (2020), no. 6, 5467-5499.
39. 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.
40. P. Angulo, D. Faraco, L. Guijarro, and M. Salo, Limiting Carleman weights and conformally transversally anisotropic manifolds. *Transactions of AMS* 373 (2020), 5171-7197.
41. M. Salo, Applications of microlocal analysis in inverse problems. *Mathematics* 8 (2020), no. 7, 1184.
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43. Rakesh, M. Salo, The fixed angle scattering problem and wave equation inverse problems with two measurements. *Inverse Problems* 36 (2020), 035005.
44. (*) **T. Ghosh, M. Salo, and G. Uhlmann, The Calderón problem for the fractional Schrödinger equation.** *Analysis & PDE* 13 (2020), no. 2, 455-475.
45. 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.
46. M. Lassas, T. Liimatainen, and M. Salo, The Poisson embedding approach to the Calderón problem. *Mathematische Annalen* 377 (2020), 19-67.
47. A. Rüland and M. Salo, The fractional Calderón problem: low regularity and stability. *Nonlinear Analysis* 193 (2020), special issue “Nonlocal and fractional phenomena”, 111529.
48. A. Rüland and M. Salo, Quantitative approximation properties for the fractional heat equation. *Math. Control Relat. Fields* 10 (2020), no. 1, 1-26.
49. 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.

50. G. Paternain, M. Salo, G. Uhlmann, H. Zhou, The geodesic X-ray transform with matrix weights. *American Journal of Mathematics* 141 (2019), 1707-1750.
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52. 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.
53. A. Rüland and M. Salo, Quantitative Runge approximation and inverse problems. *International Mathematics Research Notices* (2019), no. 20, 6216-6234.
54. B. Harrach, M. Salo, and V. Pohjola, Monotonicity and local uniqueness for the Helmholtz equation. *Analysis & PDE* 12 (2019), no. 7, 1741-1771.
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63. (*) **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.
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75. C.E. Kenig and M. Salo, Recent progress in the Calderón problem with partial data. *Contemporary Mathematics* 615 (2014), 193-222.
76. 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.
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79. (*) **G.P. Paternain, M. Salo, and G. Uhlmann, Tensor tomography on surfaces.** *Inventiones Mathematicae* 193 (2013), no. 1, 229-247.
80. 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.
81. 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.
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93. (*) **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.
94. M. Salo and L. Tzou, Carleman estimates and inverse problems for Dirac operators. *Mathematische Annalen* 344 (2009), no. 1, 161-184.
95. M. Salo, Stability for solutions of wave equations with $C^{\{1,1\}}$ coefficients. *Inverse Problems and Imaging* 1 (2007), no. 3, 537-556.
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97. M. Salo, Semiclassical pseudodifferential calculus and the reconstruction of a magnetic field. *Communications in Partial Differential Equations* 31 (2006), no. 11, 1639-1666.
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Articles in refereed conference proceedings :

103. M. Salo, The fractional Calderón problem. *Journées équations aux dérivées partielles* (2017), Exp. No. 7, 8 p.
104. 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.
105. 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.

106. 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.
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108. 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.
109. 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.
110. 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.
111. 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.
112. 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.
113. 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.
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115. 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 :

116. 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.
117. M. Salo, Distributions and Fourier transform. Chapter in *Encyclopedia of Applied and Computational Mathematics*, edited by B. Engquist, Springer-Verlag, 2015.
118. 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.
119. 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.
120. 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

Other scientific works :

121. M. Salo, Rungen lause ja sovelluksia inversio-ongelmiin (in Finnish). *Arkhimedes* 3 (2018), 6-11.

122. M. Salo, On the work of Joonas Ilmavirta (translated in Polish).
Wiadomosci Matematyczne, to appear.
123. M. Salo, Konformigeometrian mittaehetoja (in Finnish).
Suomalaisen Tiedeakatemian vuosikirja (2015).
124. M. Salo, Matka maapallon keskipisteeseen - Sädemuunnosten matematiikkaa (in Finnish).
Arkhimedes 1-2 (2014), 12-18.
125. M. Salo, Ihmisen uudet silmät – käänteisten ongelmien matematiikkaa (in Finnish).
Solmu 3 (2011), 28-30.
126. M. Salo, Inversio-ongelmat – matematiikkaa ja sen sovelluksia (in Finnish).
Arkhimedes 5 (2006), 20-25.