

List of Publications

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May 30, 2025

A. Peer-reviewed scientific articles

25. E Blåsten, P Exner, H Isozaki, M Lassas, and J Lu. “Inverse Problems for Locally Perturbed Lattices – Discrete Hamiltonian and Quantum Graph”. In: *Annales Henri Lebesgue* 7 (Sept. 2024), pp. 267–305. ISSN: 2644-9463. DOI: [10.5802/ahl.201](https://doi.org/10.5802/ahl.201)
24. ELK Blåsten, L Päivärinta, and S Sadique. “The Fourier, Hilbert, and Mellin Transforms on a Half-Line”. In: *SIAM Journal on Mathematical Analysis* 55.6 (2023), pp. 7529–7548. DOI: [10.1137/23m1560628](https://doi.org/10.1137/23m1560628)
23. E Blåsten, H Isozaki, M Lassas, and J Lu. “Inverse Problems for Discrete Heat Equations and Random Walks for a Class of Graphs”. In: *SIAM Journal on Discrete Mathematics* 37.2 (2023), pp. 831–863. DOI: [10.1137/21m1439936](https://doi.org/10.1137/21m1439936)
22. E Blåsten, H Isozaki, M Lassas, and J Lu. “Gelfand’s Inverse Problem for the Graph Laplacian”. In: *Journal of Spectral Theory* 13.1 (2023), pp. 1–45. DOI: [10.4171/jst/455](https://doi.org/10.4171/jst/455)
21. ELK Blåsten and V Pohjola. “Cones With Convolved Geometry That Always Scatter Or Radiate”. In: *Inverse Problems* 38.12 (2022), p. 125001. DOI: [10.1088/1361-6420/ac963c](https://doi.org/10.1088/1361-6420/ac963c)
20. ELK Blåsten and H Liu. “Scattering By Curvatures, Radiationless Sources, Transmission Eigenfunctions, and Inverse Scattering Problems”. In: *SIAM Journal on Mathematical Analysis* 53.4 (2021), pp. 3801–3837. DOI: [10.1137/20m1384002](https://doi.org/10.1137/20m1384002)
19. E Blåsten, H Liu, and J Xiao. “On an Electromagnetic Problem in a Corner and Its Applications”. In: *Analysis & PDE* 14.7 (2021), pp. 2207–2224. ISSN: 2157-5045, 1948-206X. DOI: [10.2140/apde.2021.14.2207](https://doi.org/10.2140/apde.2021.14.2207)
18. ELK Blåsten and H Liu. “On Corners Scattering Stably and Stable Shape Determination By a Single Far-Field Pattern”. In: *Indiana University Mathematics Journal* 70.3 (2021), pp. 907–947. ISSN: 0022-2518. DOI: [10.1512/iumj.2021.70.8411](https://doi.org/10.1512/iumj.2021.70.8411)
17. E Blåsten, L Päivärinta, and S Sadique. “Unique Determination of the Shape of a Scattering Screen From a Passive Measurement”. In: *Mathematics* 8.7 (July 2020), p. 1156. ISSN: 2227-7390. DOI: [10.3390/math8071156](https://doi.org/10.3390/math8071156)
16. E Blåsten and H Liu. “Recovering Piecewise Constant Refractive Indices By a Single Far-Field Pattern”. In: *Inverse Problems* 36.8 (Aug. 2020), p. 085005. ISSN: 1361-6420. DOI: [10.1088/1361-6420/ab958f](https://doi.org/10.1088/1361-6420/ab958f)
15. E Blåsten and EV Vesalainen. “Non-Scattering Energies and Transmission Eigenvalues in H^n ”. In: *Annales Academiæ Scientiarum Fennicæ Mathematica* 45.1 (Jan. 2020), pp. 547–576. ISSN: 1798-2383. DOI: [10.5186/aasfm.2020.4522](https://doi.org/10.5186/aasfm.2020.4522)
14. E Blåsten, H Li, H Liu, and Y Wang. “Localization and Geometrization in Plasmon Resonances and Geometric Structures of Neumann–Poincaré Eigenfunctions”. In: *ESAIM: Mathematical Modelling and Numerical Analysis* 54.3 (2020), pp. 957–976. DOI: [10.1051/m2an/2019091](https://doi.org/10.1051/m2an/2019091)

13. F Zouari, M Louati, S Meniconi, E Blåsten, MS Ghidaoui, and B Brunone. “Experimental Verification of the Accuracy and Robustness of Area Reconstruction Method for Pressurized Water Pipe System”. In: *Journal of Hydraulic Engineering* 146.3 (2020), p. 04020004. DOI: [10.1061/\(asce\)hy.1943-7900.0001674](https://doi.org/10.1061/(asce)hy.1943-7900.0001674)
12. E Blåsten, L Tzou, and JN Wang. “Uniqueness for the Inverse Boundary Value Problem With Singular Potentials in 2d”. In: *Mathematische Zeitschrift* 295.3 (Aug. 2020), pp. 1521–1535. ISSN: 1432-1823. DOI: [10.1007/s00209-019-02436-0](https://doi.org/10.1007/s00209-019-02436-0)
11. E Blåsten, F Zouari, M Louati, and MS Ghidaoui. “Blockage Detection in Networks: The Area Reconstruction Method”. In: *Mathematics in Engineering* 1.4 (2019), pp. 849–880. DOI: [10.3934/mine.2019.4.849](https://doi.org/10.3934/mine.2019.4.849)
10. F Zouari, E Blåsten, M Louati, and MS Ghidaoui. “Internal Pipe Area Reconstruction As a Tool for Blockage Detection”. In: *Journal of Hydraulic Engineering* 145.6 (June 2019), p. 04019019. ISSN: 1943-7900. DOI: [10.1061/\(asce\)hy.1943-7900.0001602](https://doi.org/10.1061/(asce)hy.1943-7900.0001602)
9. E Blåsten and YH Lin. “Radiating and Non-Radiating Sources in Elasticity”. In: *Inverse Problems* 35.1 (Nov. 2018), p. 015005. ISSN: 1361-6420. DOI: [10.1088/1361-6420/aae99e](https://doi.org/10.1088/1361-6420/aae99e)
8. E Blåsten. “Nonradiating Sources and Transmission Eigenfunctions Vanish At Corners and Edges”. In: *SIAM Journal on Mathematical Analysis* 50.6 (Jan. 2018), pp. 6255–6270. ISSN: 1095-7154. DOI: [10.1137/18m1182048](https://doi.org/10.1137/18m1182048)
7. E Blåsten. “Well-Posedness of the Goursat Problem and Stability for Point Source Inverse Backscattering”. In: *Inverse Problems* 33.12 (Nov. 2017), p. 125003. ISSN: 1361-6420. DOI: [10.1088/1361-6420/aa941f](https://doi.org/10.1088/1361-6420/aa941f)
6. E Blåsten and H Liu. “On Vanishing Near Corners of Transmission Eigenfunctions”. In: *Journal of Functional Analysis* 273.11 (Dec. 2017), pp. 3616–3632. ISSN: 0022-1236. DOI: [10.1016/j.jfa.2017.08.023](https://doi.org/10.1016/j.jfa.2017.08.023)
5. E Blåsten, X Li, H Liu, and Y Wang. “On Vanishing and Localizing of Transmission Eigenfunctions Near Singular Points: a Numerical Study”. In: *Inverse Problems* 33.10 (2017), p. 105001. DOI: [10.1088/1361-6420/aa8826](https://doi.org/10.1088/1361-6420/aa8826)
4. E Blåsten and J Sylvester. “Translation-Invariant Estimates for Operators With Simple Characteristics”. In: *Journal of Differential Equations* 263.9 (Nov. 2017), pp. 5656–5695. ISSN: 0022-0396. DOI: [10.1016/j.jde.2017.06.033](https://doi.org/10.1016/j.jde.2017.06.033)
3. E Blåsten, O Imanuvilov, and M Yamamoto. “Stability and Uniqueness for a Two-Dimensional Inverse Boundary Value Problem for Less Regular Potentials”. In: *Inverse Problems and Imaging* 9.3 (July 2015), pp. 709–723. ISSN: 1930-8337. DOI: [10.3934/ipi.2015.9.709](https://doi.org/10.3934/ipi.2015.9.709)
2. E Blåsten, L Päiväranta, and J Sylvester. “Corners Always Scatter”. In: *Communications in Mathematical Physics* 331.2 (Apr. 2014), pp. 725–753. ISSN: 1432-0916. DOI: [10.1007/s00220-014-2030-0](https://doi.org/10.1007/s00220-014-2030-0)
1. E Blåsten and L Päiväranta. “Completeness of Generalized Transmission Eigenstates”. In: *Inverse Problems* 29.10 (Sept. 2013), p. 104002. ISSN: 1361-6420. DOI: [10.1088/0266-5611/29/10/104002](https://doi.org/10.1088/0266-5611/29/10/104002)

B. Non-refereed scientific articles

1. F Zouari, M Louati, E Blåsten, and MS Ghidaoui. “Multiple defects detection and characterization in pipes”. In: *13th International Conference on PRESSURE SURGES*. Bordeaux, France: BHR Group, Nov. 2018, pp. 217–231. ISBN: 978-1-5108-7524-1

C. Scientific books (monographs)

D. Publications intended for professional communities

E. Publications intended for the general public, linked to the applicant's research

F. Public artistic and design activities

G. Theses

3. E Blåsten. "On the Gel'Fand–Calderón inverse problem in two dimensions". PhD thesis. University of Helsinki, Faculty of Science, Department of Mathematics and Statistics, 2013. URL: <http://urn.fi/URN:ISBN:978-952-10-8699-1>
2. E Blåsten. "The Inverse Problem of the Schrödinger Equation in the Plane: A Dissection of Bukhgeim's Result". Licentiate thesis. University of Helsinki, Faculty of Science, Department of Mathematics and Statistics, 2010
1. E Blåsten. "Distributioteorian alkeet ja sovellutuksia". Master's thesis. University of Helsinki, Faculty of Science, Department of Mathematics and Statistics, 2008

H. Patents and invention disclosures

I. Audiovisual material, ICT software