Erik Jansson

Curriculum vitæ

October 6, 2025

Contact information

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Positions

College Research Associate at Wolfson College, Cambridge — October 2025–
WASP Postdoctoral Researcher at Cambridge University — October 2025–
Researcher in the group of Annika Lang at Chalmers University of Technology — June–October 2025

Education

PhD in Mathematics.
Thesis title: *Geometric Numerics: From Random Fields to Shape Matching* — May 2025
Chalmers University of Technology, Sweden
Supervisors: Klas Modin and Annika Lang

Master of Science, Mathematics — May 2020
Chalmers University of Technology, Sweden

Teaching experience

Teaching assistant, Chalmers University of Technology — 2017–2025
Exercise sessions, project supervision and grading in courses in:
Linear algebra, calculus, Fourier analysis, mathematical statistics, financial time series, optimization.

Selected Awards and Honors

The Wallenberg Foundation and WASP Postdoctoral Scholarship grant for research to be conducted at the University of Cambridge — 2025
Royal Society of Arts and Sciences in Gothenburg, research & travel scholarship — 2024
WASP research stint abroad grant — 2024
Stiftelsen för Vetenskaplig Forskning och Utbildning i Matematik, travel scholarship — 2024
Best poster award at the 2024 WASP winter conference — 2024
Swedish Mathematical Society, travel scholarship — 2023
Chalmersska forskningsfonden, travel scholarship — 2022
Knut och Alice Wallenberg's foundation, travel scholarship — 2022
Best PhD student talk award at YRBGSA — 2021

Peer-reviewed publications

E.J., J. Krook, K. Modin, O. Öktem, *Geometric shape matching for recovering protein conformations from single-particle Cryo-EM data*, accepted for publication in SIAM Journal on Imaging Sciences, 2025.

S. Ephrati, E.J., K. Modin, *On spectral scaling laws for averaged turbulence on the sphere*, Physica D, vol. 481, pp. 134808, 20225.

Ephrati, S., E.J., *Two minimal-variable symplectic integrators for stochastic spin systems*, Physical Review E, vol. 111, pp. 054201, 2025.

E.J., K. Modin, *Sub-Riemannian Landmark Matching and its interpretation as residual neural networks*, accepted for publication in Journal of Computational Dynamics, 2025

E.J., M. Röding, *Interpretability versus performance of analytical and neural network-based permeability prediction models: Exploring separability, monotonicity, and dimensional consistency*, Physical Review E, 111(4), 045509, 2025

E.J., K. Modin, *Convergence of the vertical gradient flow for the Gaussian Monge problem*, Journal of Computational Dynamics, 11(1): 1–9, 2024

E.J., M. Kovács, A. Lang, *Surface Finite Element Approximation of Spherical Whittle–Matérn Gaussian Random Fields*, SIAM Journal on Scientific Computing, 44(2):A825–A842, 2022.

Preprints

S. Ephrati, E.J., A. Papini, *Diffuse behavior of transport noise on* $\mathbb{S}^2$, arXiv:2508.02707, 2025

E.J., M. Schauer, R. Seyer, A. Sharma, *Creating non-reversible rejection-free samplers by rebalancing skew-balanced Markov jump processes*, arXiv:2504.12190, 2025

E.J., K. Modin, *On the numerical signature of blow-up in hydrodynamic equations*, arXiv:2210.02328, 2024

S. Ephrati, E.J., A. Lang, E. Luesink, *An exponential map free implicit midpoint method for stochastic Lie-Poisson systems*, arXiv:2408.16701, 2024

E.J., A. Lang, M. Pereira, *Non-stationary Gaussian random fields on hypersurfaces: Sampling and strong error analysis*, arXiv:2406.08185, 2024

Research stays

Month-long visit at University of Cambridge, invitation of Carola-Bibiane Schönlieb	October 2024
Week-long visit at NTNU (Trondheim), invitation of Elena Celledoni	June 2023
Week-long visit at University of Copenhagen, invitation of Stefan Sommer	April 2023

Selected talks

Geostatiscs seminar, Mines Paris -PSL University, Paris, (Invited seminar talk)	June 2025
SPDEs: Statistics meets numerics, Institut Mittag–Leffler, Stockholm (Invited talk)	June 2025
Cambridge Image Analysis seminar, University of Cambridge (Invited seminar talk)	November 2024
Applied probability seminar, University of Warwick, Coventry (Invited seminar talk)	November 2024
NUMDIFF 17, Martin Luther University Halle–Wittenberg, Halle (Invited talk)	September 2024
Gothenburg statistics seminar, Chalmers University, Sweden (Department seminar)	September 2024
Geometric Sciences in Action 2024, CIRM, Marseille, France (Poster)	May 2024
WASP winter conference 2024, Norrköping, Sweden (Poster)	January 2024
Oberwolfach PhD student spotlight talk, Oberwolfach, Germany (Contributed talk)	November 2023
NordStat, Chalmers University, Sweden (Contributed talk)	June 2023
DNA Seminar, NTNU Trondheim, Norway (Invited seminar talk)	June 2023
SPRESTO Workshop 2023, University of Twente, the Netherlands (Invited talk)	May 2023
DIKU group seminar, University of Copenhagen, Denmark (Invited seminar talk)	April 2023
MaGIC 2023, Øyer, Norway (Contributed talk)	March 2023
PhD Students' seminar, Chalmers University, Sweden (Department seminar)	December 2022
Swedcomp 2022, Chalmers University, Sweden (Poster)	October 2022
SciCade 2022, University of Reykjavik, Iceland (Invited talk)	July 2022
Geometric deep learning seminar, Chalmers University, Sweden (Department seminar)	May 2022
Wisla winter school, Online (Contributed talk)	February 2022
NASPDE Workshop, CIRM, Marseille, France (Poster)	November 2021
YRBGSA Workshop, Online (Contributed PhD student talk)	June 2021
CAM Seminar, Chalmers University, Online (Department Seminar)	May 2021

Miscellaneous professional activities

Journal Referee:

Inverse Problems and Imaging
Journal of Computational Dynamics
Stochastic Analysis and Applications