Curriculum Vitae

Gustav Nilsson

Education

2020–2025:	Dr. rer. nat. in Mathematics, University of Potsdam, Germany.
2014–2020:	M.Sc. in Mathematics and B.Sc. in Engineering Physics, KTH, Sweden.

Employment

2024–2025:	Teaching Assistant, Department of Mathematics, KTH, Sweden.
2020–2024:	IMPRS Fellow, AEI, Germany.
2016:	Teaching Assistant, Department of Mathematics, KTH, Sweden.
2015–2016:	Teaching Assistant, School of Electrical Engineering and Computer Science, KTH, Sweden.
2014–2015:	Mathematics and Physics Tutor, Studybuddy AB, Sweden.

Teaching

2025:	Differential Equations and Transforms, SF1683, KTH, Sweden.
2025:	Linear Algebra. Advanced Course, SF1681, KTH, Sweden.
2025:	Mathematics, Basic course, with Discrete Mathematics, SF1671, KTH, Sweden.
2025:	Calculus in One Variable, SF1625, KTH, Sweden.
2024:	Complementary Course in Differential Equations and Transforms, SF1687, KTH, Sweden.
2024:	Differential Equations with Applications, SF1676, KTH, Sweden.
2023:	Linear Algebra, SF1672, KTH, Sweden.
2023:	Calculus in One Variable, SF1625, KTH, Sweden.
2023:	Calculus in Several Variables, SF1626, KTH, Sweden.
2022:	Riemannian Geometry, University of Potsdam, Germany.
2016:	Calculus in One Variable, SF1625, Department of Mathematics, KTH, Sweden.
2015–2016:	Fundamentals of Programming and Computer Science, DD1345, School of Electrical Engineering and Computer Science, KTH, Sweden.

Theses

[1] G. Nilsson, *Symmetries and mode stability of gravitational instantons*, Ph.D. thesis, University of Potsdam, 2025. Supervisor: Lars Andersson. doi:10.25932/publishup-67859.

[2] G. Nilsson, *Ricci-Flat 4-Manifolds with Toric Symmetry*, M.Sc. thesis, KTH, 2020. Supervisor: Mattias Dahl.

[3] G. Nilsson, *Ricci Flow*, B.Sc. thesis, KTH, 2019. Supervisor: Hans Ringström. http://urn.kb.se/resolve?urn=urn:nbn:se:kth:diva-254702.

Papers Published in Refereed Journals

[1] S. Aksteiner, L. Andersson, M. Dahl, G. Nilsson, W. Simon, Gravitational instantons with S^1 symmetry, *Journal für die reine und angewandte Mathematik, 2025*. doi:10.1515/crelle-2025-0037.

[2] G. Nilsson, Mode Stability for Gravitational Instantons of Type D, *Classical and Quantum Gravity, 2024*. doi:10.1088/1361-6382/ad296f.

[3] G. Nilsson, Topology of Toric Gravitational Instantons *Differential Geometry and its Applications, 2023*. doi:10.1016/j.difgeo.2024.102171.

Conference Talks

2023: Einstein Spaces and Special Geometry, Institut Mittag-Leffler, Stockholm.
2023: Central European Relativity Seminar, Stockholm.
2022: Central European Relativity Seminar, Budapest.

Seminar Talks

2025: Topics in general relativity (Seminar), Universität Münster.
2024: Seminar, differential geometry and general relativity, KTH, Stockholm.
2023: Relativity Seminar, BIMSA, Beijing.
2023: Seminar, differential geometry and general relativity (again), KTH, Stockholm.
2023: Seminar, differential geometry and general relativity, KTH, Stockholm.
2023: Oberseminar Differentialgeometrie, WWU Münster.
2022: Geometry and Gravitation Seminar, AEI, Potsdam.
2021: IMPRS Student Seminar, AEI, Potsdam.

Skills and Interests

Technical skills: Python, Java, C♯, C++, Rust, Haskell, MATLAB, LaTeX, Mathematica.
Interests: Differential geometry, geometric analysis, complex analysis, topology.

Language Proficiency

Swedish: Native
English: Fluent
German: Conversational