

SVEN BACHMANN

Department of Mathematics
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Swiss citizen
 Born October 18, 1980

July 2019 - Associate Professor of Mathematics,
 The University of British Columbia, Canada
 2017 - 2019 Assistant Professor of Mathematics,
 The University of British Columbia, Canada

PAST POSITIONS

2013 - 2017 Professor of Applied Mathematics – W2
 Institute of Mathematics, University of Munich (LMU), Germany
 2013 Researcher
 Institute for Theoretical Physics, ETH Zurich, Switzerland
 2012 - 2013 Postdoctoral fellow and
 2009 - 2012 A.J. Krener Assistant Professor
 Department of Mathematics, University of California, Davis, USA
 Mentor: *Prof. B. Nachtergaele*
 2005 Assistant
 Institute of Theoretical Physics, EPF Lausanne, Switzerland

EDUCATION

2005 - 2009 Doctor of Science in mathematical physics, ETH Zurich, Switzerland
 Advisor: *Prof. G.M. Graf*
 2000 - 2005 Master of Science in physics, EPF Lausanne, Switzerland
 Advisor: *Prof. C.E. Pfister*
 2004 Master project, Department of Applied Mathematics, University of Waterloo, Canada
 Advisor: *Prof. A. Kempf*
 2002 - 2003 Study abroad year, University of Waterloo, Canada

FELLOWSHIPS, GRANTS, AWARDS

2018-2023 NSERC Discovery Grant, total financial commitment of \$115'000
 2018-2021 NSERC Discovery Grant *Accelerator Supplement*, total financial commitment of \$120'000
 2018 *AHP Prize 2016*
 'For the most remarkable paper published in the journal *Annales Henri Poincaré*'
 2012 NSF Travel Grant for participation in the Young Researcher Symposium and the International Congress on Mathematical Physics (ICMP12)
 2005 *Prix August Dommer* (EPFL)
 'University-wide best average grade for the master program'
 2002 *Prix René Cousin* (EPFL)
 'Best average grade in first and second year and special abilities in mathematics'

ACADEMIC TEACHING

Advisor	At UBC: Two undergraduate research projects: Gurkeerat Chhina (2020) and Ji Ho Yoo (2018) Two graduate students: Justin Furlotte (2020-) and Junjie Zhu (2018-) One postdoctoral fellow: Dr. Markus Lange (2019-) At LMU: Five Master theses, seven Bachelor theses
UBC	Graduate level: Functional analysis, Topics in mathematical physics Undergraduate level: Linear algebra, Applied complex analysis, Differential calculus
LMU	Graduate level: Topologically ordered spin systems, Mathematical quantum mechanics I, Mathematical statistical physics I & II Undergraduate level: Complex analysis, Partial differential equations Seminars: Theory of distributions, Asymptotic completeness for the N -body problem in QM, Matrix analysis, Explicit methods for PDEs, Introduction to the calculus of variations, Analytic inequalities, Mathematics of the quantum Hall effect
UC Davis	Graduate level: Mathematical classical mechanics Undergraduate level: Differential equations, Calculus
ETHZ	Teaching assistant: Thermodynamics, Statistical physics, Electrodynamics, General relativity, Mechanics of continuous media, Quantum field theory
EPFL	Teaching assistant: Quantum field theory, Probability&statistics, Quantum mechanics

SERVICE

Organizer	BIRS Workshop <i>Topology and Entanglement in Many-Body Systems</i> , December 2020, Banff Local organizing committee: <i>ICMP18</i> , August 2018, Montreal Seminar coordinator: <i>Differential Geometry, Mathematical Physics & Partial Differential Equations</i> , UBC
Editor	Mathematical Physics, Analysis and Geometry
Referee	Communications in Mathematical Physics Journal of Functional Analysis Journal of the London Mathematical Society Memoirs of the American Mathematical Society Journal of Statistical Physics Reviews in Mathematical Physics Journal of Mathematical Physics Physical Review Letters Nature Communications
Examiner	Four PhD committees (LMU, Warwick University & UBC(2))

INVITED TALKS (SINCE 2015)

June '20	<i>Algebraic Structures in Quantum Computation IV</i> , UBC, Vancouver, Canada
May '20	<i>One world</i> , IAMP mathematical physics seminar, online
May '20	<i>Random Matrix & Probability Theory Seminar</i> , Harvard University, USA
Nov '19	<i>Mathematical Physics & Probability Seminar</i> , UC Davis, USA
Aug '19	<i>QMATH 14, Mathematical Results in Quantum Physics</i> , Aarhus University, Denmark
June '19	<i>Topological Phases of Interacting Quantum Systems</i> , Casa Matemática Oaxaca, Mexico
May '19	<i>Theory Canada 14</i> , UBC, Vancouver, Canada
Apr '19	<i>Many-Body Theory, Random Operators & Matrices</i> , Institut Mittag-Leffler, Sweden
Oct '18	<i>Quantum Information and Quantum Statistical Mechanics</i> , CRM Montreal, Canada
Aug '18	<i>Solid Math Workshop</i> , McGill University, Montreal, Canada
July '18	<i>SIAM Annual Meeting, Session on Quantum dynamics</i> , Portland, USA
March '18	<i>School of Analysis and Mathematical Physics</i> , University of Arizona, USA

- May '17 *Master Class on Exotic Phases of Matter*, Copenhagen University, Denmark
Feb '17 *Mathematical Aspects of Disordered Systems*, ETHZ, Switzerland
Nov '16 *CRC Seminar*, Hausdorff Center, Bonn, Germany
Sept '16 *Many-body quantum systems and effective theories*, Mathematisches Forschungsinstitute, Oberwolfach, Germany
Aug '16 *Methods of Modern Mathematical Physics, A Young Researcher Symposium on the Occasion of the 70th Birthday of Barry Simon*, The Fields Institute, Toronto, Canada
May '16 *Colloquium of pure mathematics*, Hamburg University, Germany
June '15 *Quantum Spin Systems: Recent Advances*, University of Cergy-Pontoise, France
June '15 *Quantum many-body systems, random matrices, and disorder*, ESI, Vienna, Austria

LANGUAGES – spoken and written

French: mother tongue

English: fluent

German: fluent