Curriculum Vitae

Sandra Kliem
Nationality: German
Sex: Female

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Research Interests

Degenerate stochastic differential equations, interacting particle systems and stochastic partial differential equations, population models, travelling wave solutions to and properties of SPDEs

Background

Temporary Position as Principal Investigator, Goethe-Universität Frankfurt (DE), April 2018–present

PostDoc, Universität Duisburg-Essen (DE), October 2016–March 2018
Supervisor: Anita Winter

Substitute Professor for applied mathematics (stochastics), Universität zu Köln (DE), April 2015–September 2016

PostDoc, Universität Duisburg-Essen (DE), 2011–March 2015
Supervisor: Anita Winter

PostDoc, EURANDOM, Technische Universiteit Eindhoven (NL), 2009–2011
Supervisor: Frank den Hollander

Ph.D., University of British Columbia (CA), 2004–2009
Specialization: Probability, Supervisor: Edwin A. Perkins

Diplom in Mathematics, Technische Universität Berlin (DE), 2004
Specialization: Probability, Supervisor: Michael Scheutzow

Diplom in Surveying, Technische Universität Berlin (DE), 2000
Specialization: Astronomical and Physical Geodesy, Supervisor: Dieter Lelgemann

Third Party Funding and Awards

DFG Research Grant (Temporary Position for Principal Investigator), Nov. 2017
"The KPP equation with noise - a model exhibiting local, density dependent competition"

Albertus-Magnus-teaching award (of the Department of Physics), Universität zu Köln, 2016

St John's College Sir Quo-Wei Lee Fellowship, University of British Columbia, 2007

University of BC Graduate Fellowship, UBC, 2007

St John's College Charles C C Wong Memorial Fellowship, UBC, 2006

University of BC Graduate Fellowship, UBC, 2006

St John's College Reginald and Annie Van Fellowship, UBC, 2005

Diplom in Mathematics "with distinction", Technische Universität Berlin, 2004

ERASMUS-grant at Université de Nantes (FR), TUB, 1999

Languages

Native German, fluent English and French, intermediate Dutch, basic Mandarin Chinese

Publications

Publications

(1) R. van der Hofstad, S. Kliem and Johan S.H. van Leeuwaarden, Cluster Tails for Critical Power-Law Inhomogeneous Random Graphs, *J. Stat. Phys.*, 171, 38–95, 2018.

(2) S. Kliem, Travelling wave solutions to the KPP equation with branching noise arising from initial conditions with compact support, *Stochastic Process. Appl.*, 127, 385–418, 2017.

(3) E. Aïdékon, R. van der Hofstad, S. Kliem and Johan S.H. van Leeuwaarden, Large deviations for power-law thinned Lévy processes, *Stochastic Process. Appl.*, 126 (5), 1353–1384, 2016.

(4) S. Kliem and W. Löhr, Existence of mark functions in marked metric measure spaces, *Electron. J. Probab.*, 20 (73), 1-24, 2015.

(5) S. Kliem, A compact containment result for nonlinear historical process approximations for population models with trait-dependence, *Electron. J. Probab.*, 19 (97), 1–13, 2014.

(6) A.Greven, F. den Hollander, S. Kliem and A. Klimovsky, Renormalisation of hierarchically interacting Cannings processes, *ALEA, Lat. Am. J. Probab. Stat.* 11 (1), 43–140, 2014.

(7) S. Kliem, Convergence of Rescaled Competing Species Processes to a Class of SPDEs, *Electron. J. Probab.*, 16, 618–657, 2011.

(8) S. Kliem, Long-term behaviour of a cyclic catalytic branching system, *Stochastic Process. Appl.*, 121, 357–377, 2011.

(9) S. Kliem, Degenerate Stochastic Differential Equations for Catalytic Branching Networks, *Ann. Inst. H. Poincaré Probab. Statist.*, 45, 943–980, 2009.

Accepted for Publication

S. Kliem and A. Winter, Evolving phylogenies of trait-dependent branching with mutation and competition. Part I: Existence (41 pages, *arXiv:1705.03277*, to appear in *Stochastic Process. Appl.*).

Submitted Publications

S. Kliem and K. Saha, The Genealogy of Extremal Particles of Branching Brownian Motion.

S. Kliem, Right marker speeds of solutions to the KPP equation with noise (38 pages, *arXiv:1806.05915*).

Publications in Preparation

A.A.B. Benítez, S. Gufler, S. Kliem, V.C. Tran and A. Wakolbinger, Lookdown-representation for multitype populations with competition.

Non-refereed Contributions

Ph.D. thesis in Mathematics:
Stochastic ODEs and PDEs for interacting multi-type populations, UBC, Vancouver, 2009,
available online at https://circle.ubc.ca//handle/2429/12803

Editorial work - together with Richard Liang - during Ph.D. studies at UBC:
Solutions to exercises in "The lace expansion and its applications" by Gordon Slade, 2005

Diplom-thesis in Mathematics:
Translated Title: Conditioned stochastic flows, applied to estimate the diameter of the image of a set under the action of such a flow, TUB, Berlin, 2004

Diplom-thesis in Surveying:
Translated Title: Trigonometric Series for GRACE-SST-Data: Algorithms for the Determination of Amplitude ("lumped coefficients") from high-precision Distance Measurements, TUB, Berlin, 2000

Invited Talks

5^{th} Workshop on Branching Processes and Related Topics	Shanghai (CHN)	May 2018
Workshop "Genealogies, lines of descent and duality in population models"	Erlangen	March 2018
Workshop "Spatial models in population genetics"	Bath (GB)	Sept. 2017
Research Seminar RTG 2131	Dortmund	April 2017
Workshop "Women in Probability"	München	June 2016
Australian Statistical Conference	Sydney (AU)	July 2014
Seminar "Probabilités et Statistiques"	Lille (FR)	June 2014
Conference "From interacting particle systems to population genetics"	Erlangen	February 2014
"Mind the Gap 4" - PopGen conference	Vienna (AT)	November 2013
5^{th} International Conference on Stochastic Analysis and its Applications	Bonn	September 2011
Mini-Workshop "Women in Probability"	München	July 2011
Workshop "Discrete Mathematics and Probability in Population Biology and Genetics"	Singapore (SG)	March/April 2011

Invited Participant

Program on Genealogies of Interacting Particle Systems	Singapore	July-August 2017
The Third Bath-Paris Branching Structures Meeting	Bath (GB)	June 2014

Selected Contributing Talks

Workshop on Stochastic Analysis and Random Fields	Haifa (IL)	Dec. 2017
Mini Workshop "Probabilistic models in evolutionary biology"	Göttingen	Nov. 2016
SPP 1590-Workshop "Genealogies in evolution: Looking forward and backward"	Frankfurt	October 2015
11^{th} German Probability and Statistics Days	Ulm	March 2014
Workshop "Young Women in Probability"	Bonn	May 2011
Workshop on Stochastic Models for Population Dynamics	Eindhoven (NL)	March 2011

Other Professional Activities

Research visit: Beijing (CHN), 2 weeks, May-June 2018.

Supervision: 11 bachelor theses in Köln.

Co-supervision: one Diplomarbeit, one master thesis in Essen.

Organizer of the probability seminar at UDE, 2014.

Assisted A. Winter with securing a research grant for the DFG priority program SPP 1590, 2012.

Organizer of the RSS (Random Spatial Structures)-Seminar at EURANDOM, 2010–2011.

assisted in the organization of the PIMS-MITACS Summer School in Probability, UBC, 2008.

Organizer of the Probability Graduate Student Seminar, UBC, 2007.

Referee for *Ann. Inst. H. Poincaré Probab. Statist.*, *Electron. J. Probab.*, *Ann. Appl. Probab.*

Teaching Experience

Universität Duisburg-Essen

instructor	Stochastics I for prospective teachers	2017

Universität zu Köln

instructor	Mathematics for prospective teachers II	2016
instructor	Mathematics for prospective teachers I	2015
instructor	Seminar: Selected Topics in Statistics	2015
instructor	Probability Theory Part I	2015
instructor	Seminar: Stochastic Models and Methods	2015

Universität Duisburg-Essen

co-instructor	Seminar: Stochastic Population Models	2014
instructor	Statistics for Natural Sciences	2014
instructor	Statistik for Natural Sciences	2012
"assistent"	Probability theory I	2012
instructor	Markov Chains: Stochastic Algorithms	2011

(the German word "assistent" signifies a position in between tutor and instructor; it usually entails organizing and conducting weekly sessions, mainly concerned with lecture revision and abstract problem solving)

TU/e (Technische Universiteit Eindhoven, The Netherlands)

"instructor"	Conducting problem solving sessions and marking exams in Statistics for Architecture, Building and Planning Bachelor	2010

(the Dutch word "instructor" corresponds essentially to the english word "tutor")

UBC (University of British Columbia, Canada)

"workshops"	MATH 180, Differential Calculus with Physical Applications and MATH 184, Differential Calculus for Social Science and Commerce	2008

(in "workshops" I supervise about 20 first-year students together with an undergraduate TA that work on given questions in small groups on blackboards)

instructor	MATH 318, Probability with Physical Applications	2007
marker	MATH 320, 321 (Real Variables I, II), MATH 420/507 (Measure Theory and Integration), MATH 421/510, (Functional Analysis), MATH 302 (Introduction to Probability)	2004–2007

TUB (Technische Universität Berlin, Germany)

tutor (voluntary)	1 week compact seminar in Kienbaum for analysis exam	2004
tutor (voluntary)	1 week compact seminar in Kienbaum to prepare students for their linear algebra exam	2003
tutor	Conducting problem solving sessions and marking homeworks in Linear Algebra 1, Analysis 2 for engineering students, Probability 1, Analysis 3	2002–2004