Maxim Sølund Kirsebom

[alt. sp.: Maxim Solund Kirsebom, Maxim Soelund Kirsebom]

Curriculum vitae

Department of Mathematics
University of Hamburg
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Danish citizen, born in Norway.

Education & Academic Degrees

PhD in Mathematics, University of Bristol, UK, finished 06/2014.
Supervisor: Prof. Dr. Alexander Gorodnik.
Thesis title: *Extreme value theory for group actions on homogeneous spaces*.
137 pages, ungraded.

MSc in Mathematics, Aarhus University, Denmark, finished 09/2010.
Supervisor: Dr. Simon Kristensen
Thesis title: *The Set of Exceptions to Littlewood's Conjecture*.
93 pages, grade 12.

BSc in Mathematics, Aarhus University, Denmark, finished 12/2008.
Supervisor: Dr. Simon Kristensen
Thesis title: *Zeros of Polynomials with Restricted Coefficients*.
53 pages, grade 12.

Academic appointments

Postdoctoral Fellow, 01/11/2017–Present.
University of Hamburg, Germany.
DFF Postdoctoral Fellow, 01/01/2016–31/10/2017.
University of Bremen, Germany and University of Aarhus, Denmark.
Postdoctoral Fellow, 03/09/2014–01/12/2015.
University of Bremen, Germany.

Grants

Hamburg-Lund strategic partner collaboration, 04.2018-09.2019, €8288.
Travel grant for visits between Hamburg and Lund.
Team leaders: M. Kirsebom (UHH), P. Kunde (UHH), T. Persson (LU) and Jörg Schmeling (LU).

DFF & Marie Curie Foundation, 01.2016-12.2017, DKK 1.573.449 ($\sim$ €211.669)
Postdoc research grant for own position.
Project title: Extremes in Homogeneous Dynamics with Number Theoretic Perspectives.

Research Interests

Dynamical Systems, Random Walks, Ergodic Theory, Number Theory, Extreme Value Theory, Lie groups and Homogeneous Spaces, Diophantine Approximation and Continued Fractions, Fractal Geometry.

Supervision & Mentoring

Ph.D. Students:
Wafa Ben Saad, 2016-present (joint with Prof. Dr. Marc Keßeböhmer, University of Bremen).

Modelling camp mentoring:
Mentor for two groups in 2019 in the yearly "Modelling Camp" at the University of Hamburg.

Forskerspirer mentoring:
Joakim Færgemann, 2016, 3rd year high school student.
Mentoring his project in the "Forskerspirer" ("Aspiring Researcher") competition.
Project title: "Largest collection of cards in the game SET without a valid set".

Events organised

Hanseatic Dynamical Systems Days (HanDSDays), 06/2018.
Regional one-day workshop on dynamical systems and ergodic theory.
Co-initiator of "HanDSDays" and co-organiser of the 1st workshop (with Philipp Kunde).
University of Hamburg, Germany.

Dynamics, Chaos and Applications, 03/2016.
4th Bremen Winter School and Symposium.
Main Organiser (with Marc Keßeböhmer, Jens Rademacher and Ivan Ovsyannikov).
University of Bremen, Germany.

Publications & preprints

In preparation:

1. W. Ben–Saad, M. Kesseböhmer and M. Kirsebom, "Random fractals and multifractals with dependence", *in preparation*.
2. M. Kirsebom and P. Kunde, "Eventually always hitting points for circle rotations of Diophantine type", *in preparation*.
3. M. Kirsebom, P. Kunde and T. Persson, "On shrinking target properties for infinitely recurring and covering points", *in preparation*.
4. M. Kirsebom and K. Mallahi-Karai, "An extreme value law for the unipotent flow on the space of unimodular lattices", *in preparation (draft available upon request)*.
5. M. Kirsebom and S. Lim, "Poisson Law and other metric limit theorems for complex continued fractions", *in preparation (draft available upon request)*.

Published and submitted:

6. M. Kirsebom, P. Kunde and T. Persson, "Shrinking targets and eventually always hitting points for interval transformations".
   Preprint, arXiv:1903.06977, submitted, April 2019.

7. M. Kirsebom, "Extreme value distributions for one-parameter actions on homogeneous spaces". *Preprint, arXiv:1503.09191*, submitted, September 2018.

8. A. Ghosh, M. Kirsebom and P. Roy, "Continued fractions, the Chen-Stein method and extreme value theory".
   Submitted April 2019, accepted to *Ergodic Theory & Dynamical Systems*.

9. M. Kirsebom, "Extreme value theory for random walks on homogeneous spaces".
   Discrete and Continuous Dynamical Systems - Series A, **34** (2014), 4689 - 4717.

Invited talks and lectures

Analysseminarium, 09/2019.
Research Seminar.
Lund University, Sweden.
Probabilistic Methods in Negative Curvature, 03/2019.
Conference talk.
International Centre for Theoretical Sciences, Bangalore, India.
Hanseatic Dynamical Systems Days II, 11/2018.
Conference Talk.
University of Lübeck, Germany.
Oberwolfach Arbeitsgemeinschaft Talk, 10/2018.
Rigidity of Stationary Measure.
Mathematisches Forschungsinstitut Oberwolfach, Germany.
Research Seminar, 09/2018.
Seoul National University, Republic of Korea.
Dynamical Systems and Geometry Seminar, 05/2018.
Research Seminar
University of Bremen, Germany.
Lothar-Collatz-Seminar, 05/2018.
Research Seminar.
University of Hamburg, Germany.
Dynamical Systems, 12/2017.
Research Seminar.
University of Hamburg, Germany.

Dynamical Systems, 12/2017.
Research Seminar.
University of Hamburg, Germany.

Dynamical Systems and Mathematical Physics, 11/2017.
Research Seminar.
University of Jena, Germany.

Research Seminar, 10/2017.
Seoul National University, Republic of Korea.

Homogeneous dynamics -and its applications to number theory, 05/2017.
One-day workshop.
Seoul National University, Republic of Korea.

Mini-course: Extreme Value Theory in Dynamical Systems, 05/2017.

2 x 90 min lectures. On invitation by Professor Seonhee Lim. All costs covered.
Seoul National University, Republic of Korea.

Dynamical Systems and Geometry Seminar, 02/2017.
University of Bremen, Germany.

Dynamical Systems and Geometry Seminar, 02/2017.
University of Bremen, Germany.

Dynamical Systems and Geometry Seminar, 11/2014.
University of Bremen, Germany.

Dynamical Systems and Geometry Seminar, 05/2014.
University of Bremen, Germany.

Analysis Seminar, 08/2013.
Aarhus University, Denmark.

Ergodic Theory and Dynamical Systems Seminar, 05/2013.
University of Bristol, UK.

Pure Postgraduate Seminar, 10/2012.
University of Bristol, UK.

YRM conference, 04/2012.
University of Bristol, UK.
"Friends of Euler" - Student Organised Seminar, 12/2008.
Aarhus University, Denmark.

Teaching

Analysis 2, Summer 2019.
First year course at TUHH, tutorial instructor, 2h per week. In German.
Analysis 3, Winter 2018-19.
Second year course at TUHH, tutorial instructor, 4h per week. In German.
Analysis 2, Summer 2018.
First year course at TUHH, tutorial instructor, 4h per week. In German.
Analysis 3 and Differential Equations 1, Winter 2017-2018.
Second year courses at TUHH, tutorial instructor, 4h per week. In German.
Measure and Probability Theory 2 (Mass- und Wahrscheinlichkeitstheorie 2), 2015.
B.Sc/M.Sc.-level lecture course, 4h lectures + 2h tutorial per week. In German.
University of Bremen, Germany.
Joint with Prof. Dr. M. Keßeböhmer.

Inequalities and Proofs by Induction (Ungleichungen und Induktionsbeweise), 2015.
Lecture in "Brückenkurs", course bridging gap between high school and university. In German.
University of Bremen, Germany.
Analysis 1, 2014-2015.
First year analysis course, tutorial instructor, 2h per week + grading homeworks. In German.
University of Bremen, Germany.

Analysis and Calculus, 2011–2012
First year analysis course, tutorial instructor, 2h per week + grading homeworks. In English.
University of Bristol, UK.

Dynamical Systems & Ergodic Theory + Algebraic Number Theory, 2010–2012

3rd/4th years course, grading homeworks.
University of Bristol, UK.

Refereeing

Peer reviewed for: *Nonlinearity* and *Stochastics and Dynamics*.

Membership of scientific networks

- $\mathbb{N}^3$, Nordic Number theory Network.

Outreach activities

"Nature in the Tent" ("Natur i Teltet"), 2007–2008.
Science outreach for general public.
Developing teaching materials, interacting with interested members of the public. In Danish.
Aarhus University, Denmark.

Administrative Responsibilities

Secretary of "Friends of Euler", 2007-2009.
A student organization arranging talks, events and excursions.
Department of Mathematics, Aarhus University, Denmark.

"Natur i Teltet", 2007-2009
A science outreach for primary/high school.
Responsible for organizing and creating content for the mathematics part.
Department of Mathematics, Aarhus University, Denmark.

Committee for the Allocation of Student Offices, 2007-2009.
Member of committee, responsible for allocation of math students.
Department of Mathematics, Aarhus University, Denmark.

Editor in Chief of "Mads Føk", 2006-2009.
The faculty student paper.
Faculty of Natural Sciences, Aarhus University, Denmark.

Programming skills

Latex: Advanced.
HTML: Working knowledge.
Python: Basic.

Language skills

Danish: Mother tongue.
English: Fluent.
German: Fluent.
Italian: Conversational.