# Patricia Alonso-Ruiz

Contact Information

Ulm University, Institute of Stochastics
Helmholtzstr. 18
89081 Ulm, Germany
Phone: +49 731 5023526
Email: `patricia.alonso@uni-ulm.de`

| | |
|---|---|
| **Research interests** | Limit theorems, random fields, exchangeability, stochastic processes and analysis on fractals. |
| **Employment** | Postdoc, *Ulm University*<br>October 2013 - present. |
| **Education** | Ph.D. in mathematics, *University of Siegen*<br>May 2013<br>Thesis advisor: Prof. Uta Freiberg.<br>Thesis title: "Dirichlet forms on non self-similar sets: Hanoi attractors and the Sierpiński gasket".<br><br>Licenciatura en Ciencias Matemáticas (Master's degree in mathematics), *Universidad Complutense Madrid*<br>October 2004 - July 2009.<br><br>Semesters Abroad, *Ludwig-Maximilians-University Munich*<br>October 2007 - July 2008. |
| **Further qualifications** | Professional teaching competence for university-level teaching, *University of Siegen*. |
| **Awards** | Grant program for female scientists (1200 EUR), *Ulm University*<br>October 2015 - April 2016.<br><br>Scholarship for the promotion of women, *University of Siegen*<br>October 2012 - March 2013.<br>DAAD Ph.D. scholarship<br>September 2009 - April 2012.<br><br>Erasmus scholarship *Caja Madrid*<br>September 2007 - July 2008 |
| **Publications and preprints** | Publications in peer-reviewed journals:<br><br>*Dirichlet forms on Hanoi attractors*, with U. Freiberg, Int. J. Applied Nonlinear Science, **1** (2014), no. 3, 247–274.<br><br>*Hanoi attractors and the Sierpiński Gasket*, with U. Freiberg, Special issue of Int. J. Math. Model. Numer. Optim. on Fractals, Fractal-based Methods and Applications **3** (2012), no. 3, 251–265.<br><br>Articles accepted for publication in a peer-reviewed journal:<br><br>*Energy and Laplacian on Hanoi-type fractal quantum graphs*, with D. Kelleher, and A. Teplyaev (2015), arXiv:1408.4658. To appear in Journal of Physics A: Mathematical and Theoretical.<br><br>Articles submitted to peer-reviewed journals:<br><br>*Nonparametric estimation of entropy for marked Poisson point processes*, with E. Spodarev, submitted (2015), arXiv:1511.03830. |

*The limit theorem for maximum of partial sums of exchangeable random variables*, with A. Rakitko, submitted (2015), arXiv:1506.09183.

*Weyl asymptotics for Hanoi attractors*, with U. Freiberg, submitted (2015), arXiv:1307.6719

INVITED TALKS

*Mathematisches Kolloquium*, University of Bremen, 9 June 2015.

*Workshop:"Probability, Analysis and Geometry"*, Moscow State University, 2 October 2014.

*The 10th AIMS Conference on Dynamical Systems, Differential Equations and Applications*, Universidad Autónoma de Madrid, 8 July 2014.

*5th Cornell Conference on Analysis, Probability, and Mathematical Physics on Fractals* Cornell University, 13 June 2014.

*Stochastics Seminar*, Moscow State University, 30 April 2014.

*Fractal geometry and Stochastics V*, Tabarz, Germany, 25 March 2014.

*Probability Seminar*, University of Essen, 19 November 2013.

*Workshop:"Probability, Analysis and Geometry"*, Ulm University, 2 September 2013.

*Mathematisches Kolloquium*, University of Bremen, 2 July 2013.

*Analysis and Probability Seminar*, University of Connecticut, 5 March 2013.

*International Conference of Advances on Fractals and Related Topics*, Hong Kong University, 11 December 2012.

SUPERVISION

Undergraduate research project "Finding the knot in the fiber system", Computational Sciences and Engineering, Fall 2016, Ulm University.

Co-advisor of Bachelor's thesis "Estimation of entropy of directional distributions", Fall 2015, Ulm University.

TEACHING

Lecturer at Ulm University:

*Random fields*, Mathematics, Spring 2016 (planned).

*Stochastic for Economic Sciences*, Economic Sciences (approx. 180 students), Fall 2014.

Teaching assistant:

*Fractal Geometry*, Mathematics, Spring 2013, University of Siegen.

*Mathematics III for engineers*, Civil Engineering, Spring 2013, University of Siegen.

*Linear Algebra I*, Mathematics, Fall 2012, University of Siegen.

*Fractal Geometry*, Mathematics, Spring 2012, University of Siegen.

*Discrete Mathematics for Computer Sciences*, Computer Sciences, Fall 2011, University of Siegen.

*Analysis I*, Mathematics, Fall 2010, LMU Munich.

*Ordinary Differential Equations*, Mathematics, Spring 2010, LMU Munich.

*Introductory course in Mathematics*, Mathematics, Fall 2009, UCM Madrid.

Student seminar organization:

*Stochastic Geometry and its Applications*, Spring 2014, Ulm University.

Distance course teaching assistant, Academy of Sciences, Finance and Technology, Ulm:

*Stochastic risk modelling and statistical methods*, Spring 2015.

*Stochastic risk modelling and statistical methods*, Spring 2014.

*Insurance claim mathematics*, Spring 2014.

| | |
|---|---|
| SERVICE | Referee for *Monatshefte für Mathematik*. |
| ATTENDED CONFERENCES | Travel funding obtained for the conferences listed below. |
| | *Oberwolfach Seminar: Dirichlet Forms and its Applications*, Oberwolfach, October 2015. |
| | *Summer School on Nonlocal operators*, Bielefeld, July 2012. |
| | *Fractals and related fields II*, Porquerolles, September 2011. |
| LANGUAGES | Spanish (Native), German (Fluent), English (Fluent), French (Good). |
| ADDITIONAL INFORMATION | Java programming |
| | Degree of music studies (Accordion) *Official Music School Burgos, Spain* October 1996 - June 2004. |