

Curriculum Vitae

Full Name Maria Margarethe Dostert

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Education & Employment

08/2013 – 06/2017	PhD in Mathematics University of Cologne, Germany Advisor: Frank Vallentin
03/2010 – 02/2013	Master of Science in Computer Science University of Applied Sciences, Trier, Germany Advisor: Peter Rosmanith (RWTH Aachen, Germany) Heinz Schmitz (University of Applied Sciences Trier)
03/2007 – 02/2010	Bachelor of Science in Computer Science University of Applied Sciences, Trier, Germany Advisor: Heinz Schmitz (University of Applied Sciences, Trier)

Grants

- DAAD Mobility grant, 2016, 1155 €

Publications

Research article

- *New upper bounds for the density of translative packings of three-dimensional convex bodies with tetrahedral symmetry*
Maria Dostert, Cristóbal Guzmán, Fernando Mário de Oliveira, Frank Vallentin
2017, 30 pages, accepted for publication in *Discrete & Computational Geometry*,
<http://arxiv.org/abs/1510.02331>
- *A Complexity Analysis and an Algorithmic Approach to Student Sectioning in Existing Timetables*
Maria Dostert, Andreas Politz, Heinz Schmitz, April 2015, 9 pages, *Journal of Scheduling*,
Springer, <http://link.springer.com/article/10.1007%2Fs10951-015-0424-2>

Surveys

- *Das Problem der Kugelpackung* (in German)
Maria Dostert, Stefan Krupp, Jan Rolfes, Snapshot of modern mathematics from
Oberwolfach, April 2016, 12 pages,
<https://imaginary.org/snapshot/das-problem-der-kugelpackung>

Extended Abstracts

- *New upper bounds for the density of translative packings of superballs*
Maria Dostert, page 58-60, February 2016, Oberwolfach Report 3/2016
- *Die parametrisierte Komplexität des Student Sectioning Problems (in German)*
Maria Dostert, March 2013, page 15-18, GI-Edition Lecture Notes in Informatics
<http://subs.emis.de/LNI/Seminar/Seminar12/S-12.pdf>

Theses

- *Geometric packings of non-spherical objects*
PhD-thesis for mathematics, 2017
- *Analysis of the parameterized complexity of the student sectioning problem*
Master thesis for computer science, 2013
- *Entwurf und Implementierung einer grafischen Benutzeroberfläche zur Steuerung von Planungsalgorithmen (in German)*
Bachelor thesis for computer science, 2010

Talks & Poster

- *New bounds for the density of geometric packings*
ABC Seminar, Cologne, June 2017 (talk)
- *New upper bounds for the density of translative packings of three-dimensional convex bodies with tetrahedral symmetry*
Summer School on Real Algebraic Geometry and Optimization, Georgia Tech (conference talk)
- *New upper bounds for the density of translative packings of three-dimensional convex bodies with tetrahedral symmetry*
SIGOPT 2016: International Conference on Optimization, Trier, April 2016 (conference talk)
- *New upper bounds for the density of translative packings of superspheres*
Oberwolfach workshop: Lattices and Applications in Number Theory, January 2016 (invited conference talk)
- *New upper bounds for the density of translative packings of superspheres*
Seminar Combinatorics and Optimization, Centrum Wiskunde & Informatica, Amsterdam, November 2015 (invited seminar talk)
- *New upper bounds for the density of translative packings of superspheres*
FRICO 2015 – 19th Workshop on Future Research in Combinatorial Optimization, Cologne, August 2015 (conference talk)
- *SOS polynomials invariant under finite reflection groups*
Third ERC Workshop FU Berlin, March 2015 (Poster)

- *SOS polynomials invariant under finite reflection groups*
Research Seminar, University of Cologne, January 2015 (seminar talk)

Conferences & Workshops

2016

- Oberwolfach workshop: Lattices and Applications in Number Theory
- SIGOPT 2016: International Conference on Optimization, University of Trier
- Summer School on Real Algebraic Geometry and Optimization, Georgia Tech, Atlanta

2015

- Third ERC Workshop: Discrete Models in Geometry and Topology, FU Berlin
- Summer School: Convex geometry - discrete and computational, Berlin
- FRICO 2015 – 19th Workshop on Future Research in Combinatorial Optimization, Cologne
- Workshop: Efficient algorithms in game theory, optimization and data science, Aachen
- Conference: Panorama of Mathematics, Hausdorff Center Bonn

2014

- Workshop: Applications of Real algebraic geometry, Helsinki
- Symposium: Diskrete Mathematik, Frankfurt am Main
- Oberwolfach seminar: Recent Methods in Sphere Packing and Optimization

2013

- Second ERC Workshop: Delaunay Geometry, Triangulations and Spheres, FU Berlin

Teaching assistant

Winter 2016/2017

- *Theoretical computer science*, Lecture, Master students
University of Cologne, Germany

Summer 2016

- *Operations research*, Lecture, Bachelor students
University of Cologne, Germany

Winter 2015/2016

- *Convex optimization*, Lecture, Master students
University of Cologne, Germany

June 29 – July 10 2015

- *Convex geometry: discrete and computational*, Lecture, PhD Students
BMS Summer school, Berlin, Germany

Winter 2014/2015

- *Polynomial optimization*, Seminar, Bachelor and Master students
University of Cologne, Germany

Winter 2013/2014

- *Nonlinear optimization*, Lecture, Master students
University of Cologne, Germany

Winter 2012/2013

- *Theoretical computer science*, Lecture, Bachelor students
University of Applied Sciences, Trier, Germany

Summer 2012

- *Linear algebra*, Lecture, Bachelor students
University of Applied Sciences, Trier, Germany

Winter 2011/2012

- *Theoretical computer science*, Lecture, Bachelor students
University of Applied Science, Trier, Germany

Summer 2011

- *Linear algebra*, Lecture, Bachelor students
University of Applied Sciences, Trier, Germany

Winter 2010/2011

- *Theoretical computer science*, Lecture, Bachelor students
University of Applied Sciences, Trier, Germany

Students

Informal Thesis Co-Advisor

- Alexander Pütz, *On upper bounds for the density of translative packings of convex bodies invariant under finite reflection groups*, Master thesis.
University of Cologne, principal advisor: Frank Vallentin