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Curriculum Vitae — Betul Orcan-Ekmekci

Rice University
Department of Mathematics
6100 Main St,
Houston, TX 77005

Voice: (512) 590 4452
E-mail: orcan@rice.edu
WebPage: http://math.rice.edu/∼bo2/

Academic Positions

Rice University , Houston, Texas USA

G.C. Evans Instructor — **Fall 2011-Current**

MSRI, Berkeley, California USA

Postdoctoral Fellow — **Spring 2011**
Free Boundary Problems, Theory and Applications

University of Texas at Austin , Austin, Texas USA

Teaching Assistant — **2010 and Fall 2005- Spring 2008**
Assistant Instructor — **Fall 2008**
Research Assistant — **2009**

Bogazici (Bosphorus) University, , Istanbul, TURKEY

Teaching Assistant — **2003-2005**

Education

University of Texas at Austin , Austin, Texas, USA

Ph.D. Mathematics, December 2010

Advisor: Prof. Luis Caffarelli
Dissertation Title: *About the Largest Subsolution for a Free Boundary Problem in R^2: Elliptic Case*

Bogazici (Bosphorus) University, , Istanbul, TURKEY

M.S., Mathematics, May 2005

Advisor: Prof. Alp O. Eden
Thesis Title: *Some Fixed Point Theorems with some Applications to Differential Equations*

Bogazici (Bosphorus) University, , Istanbul, TURKEY

B.S., Mathematics, May 2003

Grants

AMS-Simons Travel Grant — **2012-2014**

Awards

University of Texas at Austin , Austin, Texas USA

Professional Development Award — **Fall 2009**
David Bruton jr. Fellowship — **Spring 2006 and Summer 2006**
Deans Excellence Fellowship — **Fall 2005 and Spring 2006**

Research Interests

Partial Differential Equations, Free Boundary Problems and Applications, Homogenization Problems in Periodic and Stationary Ergodic Cases, Geometric Variational Problems in Random Media

Papers & Preprints

1. B. Orcan-Ekmekci, On the Largest Subsolution for a Free Boundary Problem in $\mathbf{R}^2$: Elliptic Case, *accepted to Calculus of Variations and Partial Differential Equations*
2. B. Orcan-Ekmekci, Homogenization results for a Free Boundary problem with Stationary Ergodic Free Boundary in $\mathbf{R}^2$: In the Form of Layers, *Submitted*
3. L. Caffarelli, R. Hardt, and B. Orcan-Ekmekci, On the highly oscillatory Plateau problem, *Preprint*
4. A. Mellet, and B. Orcan-Ekmekci, Capillary Drop Motion on a Random Inhomogeneous Plane, *Preprint*
5. B. Orcan-Ekmekci, Optimal Regularity Results for Parabolic Integro-Differential Equation with Obstacle, *Preprint*

Electronic versions of my papers are available at http://math.rice.edu/ $\sim$ bo2/ .

Academic Talks in Conferences

2013 AMS and MAA Joint Mathematics Meetings, San Diego, California USA

Talk at AMS Session on Ergodic Theory, Dynamics, and Harmonic Analysis **January 12, 2012**

Young Women in PDE, Bonn, Germany

Contributed Talk **May 11, 2012**

On Geometry and Regularity Properties of Viscosity Solutions for Free Boundary Problems

AMS Spring Western Section Meeting, Las Vegas, Nevada, USA

Invited Speaker at Special Session on Geometric Analysis **April 30, 2011**

On Geometry and Non-Degeneracy of Largest Subsolutions for Free Boundary Problems

33rd Annual Texas Partial Differential Equations Conference, Austin, Texas USA

On the Regularity of Integral Variational Obstacle Problems **April 10, 2010**

2010 AMS and MAA Joint Mathematics Meetings, San Francisco, California USA

Talk at AMS Session on Differential and Difference Equation **January 15, 2010**

Homogenization of the Laplace Equation with Oscillating Stationary Ergodic Free Boundary

Abstract:`http://www.ams.org/amsmtgs/2124_abstracts/1056-35-1793.pdf`

SAGE: Symposia on Analysis of Geometric Evolution, Austin, Texas USA

Flame Propagation and Homogenization **April 29, 2008**

`http://www.ma.utexas.edu/users/danknopf/SAGE08.htm`

Continuum Mechanics Seminar, University of Texas at Austin, Austin, Texas USA

Existence results for Navier-Stokes equations **October 19, 2007**

Fundamental Equations for the Newtonian Fluids **October 17, 2007**

Academic Talks in Department Seminars

Geometry-Analysis Seminar- Rice University	**Fall 2012**
Analysis Seminar-University of Texas at Austin	**Spring2012**
PDE Seminar- University of Houston	**Fall 2011**
Geometry-Analysis Seminar- Rice University	**Fall 2011**
PDE Seminar- University of California-Berkeley	**Spring 2011**

Service

Panelist in careers in the Mathematical Sciences at Rice AWM event	**Nov 2012**
Co-organizer of Minimal Surfaces Seminar	**Fall 2012**
Co-organizer of Current Mathematics Seminar	**Fall 2012**
Co-organizer of Graduate Teaching Seminar	**Fall 2011-Spring 2012**
Co-organizer of Stochastic Differential Equations Seminar	**Spring 2012**
Co-organizer of Multi-valued Functions Seminar	**Fall 2011**

Teaching Experience

Rice University - Instructor

Math 423- Partial Differential Equations (Upper & Graduate Level)	**Fall 2012**
Math 111- Fundamental Theorem of Calculus	**Fall 2012**
Math 382 - Complex Analysis (Upper Level)	**Spring 2012**
Math 102 - Single Variable Calculus II	**Spring 2012**
Math 111- Fundamental Theorem of Calculus	**Fall 2011**

University of Texas at Austin

Assistant Instructor

Math 305- Elementary Functions and Coordinate Geometry-2 sections **Fall 2008**

Teaching Assistant

- *Graduate Level Courses :* Methods of Applied Mathematics, Stochastic Processes and Applications, and Real Analysis(2 semesters)
- *Upper Level Courses :* Applied Linear Algebra, Scientific Computation in Numerical Analysis, Advanced Calculus for Applications, and Methods of Applied Mathematics
- *Lower Level Courses :* Differential and Integral Calculus

Bogazici (Bosphorus) University - Teaching Assistant **2003-2005**

Upper Level Courses: Ordinary Differential Equations, Real Analysis I, and Real Analysis II

References

Professor Luis Caffarelli: University of Texas at Austin, *E-mail:* caffarel@math.utexas.edu

Professor Robert Hardt: Rice University, *E-mail:* hardt@rice.edu

Professor Ovidiu Savin: Columbia University, *E-mail:* savin@math.columbia.edu

Professor Michael Wolf: Rice University, *E-mail:* mwolf@math.rice.edu

Professor Tim D. Cochran: Rice University, *E-mail:* cochran@rice.edu (Teaching Mentor)