

Bartłomiej Siudeja

- POSITION J. L. Doob Research Assistant Professor
- CONTACT INFORMATION **Department of Mathematics** phone: 217-265-5082
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- RESEARCH INTERESTS
- Probability
 - Symmetric stable processes and their potential theory.
 - Subordinate Brownian motions.
 - Differential equations
 - Dirichlet and Neumann eigenvalue problems for elliptic operators.
 - Geometric bounds for eigenvalues.
 - Spectral theory of magnetic Laplacian, p -Laplacian and linear elasticity.
- EDUCATION
- **Purdue University**, West Lafayette, Indiana USA
 - Ph.D., Mathematics, May 2008
 - Advisor: **Professor Rodrigo Bañuelos**
 - Thesis: “Dirichlet and Neumann heat kernel properties.”
 - **Wrocław University of Technology**, Wrocław, POLAND
 - M.S., Mathematics, June 2003
 - Advisor: **Professor Tadeusz Kulczycki**
 - Thesis: “Intrinsic ultracontractivity of the Feynman-Kac semigroup for relativistic stable processes.”
- HONORS AND AWARDS
- Purdue University: A. H. Ismail Interdisciplinary Doctoral Travel Grant, 2006.
 - Purdue University: Gerald R. MacLane Memorial Award, Outstanding Graduate Student in Mathematics, 2004.
 - Polish Mathematical Society: The Best Student’s Paper in Probability and Applied Mathematics, First Award, 2003.
- NSF SUPPORT
- Proposal submitted to Analysis program, 2010; pending
- TEACHING EXPERIENCE
- **University of Illinois at Urbana-Champaign**, Urbana, Illinois
 - Graduate level Applied Stochastic Processes
 - Matrix Algebra using Mathematica
 - Ordinary Differential Equations, Probability
 - **Purdue University**, West Lafayette, Indiana
 - Instructor: Calculus, Algebra
 - Recitation: Calculus, Calculus and Analytic Geometry

CONFERENCE • AMS special session on “Sharp spectral estimates in analysis, geometry, and
CO-ORGANIZED probability” (Spring 2010 Southeastern Section Meeting). [Program](#)

CONFERENCE • The method of rotations and tight frames: sharp upper bounds for sums of
PRESENTATIONS eigenvalues. Nonlocal operators and partial differential equations, Bedlewo
POLAND, 2010.

- The method of rotations and tight frames: sharp upper bounds on Laplace eigenvalues. Queen Dido Conference, Carthage TUNISIA, 2010.
- Sums of Dirichlet eigenvalues: minimizing with equilateral triangles. AMS Spring Southeastern Sectional Meeting, Kentucky US, 2010.
- Sharp bounds for eigenvalues of triangles. AMS Fall Central, Texas US, 2009.
- Isoperimetric bounds for Neumann eigenvalues of triangles. Low Eigenvalues of Laplace and Schrödinger Operators, Oberwolfach GERMANY, 2009
- Isoperimetric bounds for eigenvalues of triangles. Symposium on Inverse Problems Honoring Alberto Calderón, Rio de Janeiro BRAZIL, 2007.
- Sharp estimates for eigenvalues of triangles. International Conference on Stochastic Analysis and Its Applications, Seattle US, 2006.
- Intrinsic ultracontractivity for relativistic stable processes. Analysis and Probability related to solvable Lie groups, Zakopane POLAND, 2002.

SEMINAR
TALKS

- The method of rotations and tight frames: sharp upper bounds on Laplace eigenvalues, Analysis Seminar, Washington Univ. at St. Louis, Oct. 2010.
- Sharp bounds for eigenvalues of triangles, Analysis Seminar, Syracuse University, Dec. 2009
- Sharp bounds for eigenvalues of triangles, Differential Geometry Seminar, University of California Irvine, Oct. 2009.
- Sharp integrability condition of an exit time for stable processes from unbounded domains, Probability Seminar at University of Virginia, Feb. 2008.
- Neumann heat kernel monotonicity, Joint Differential Equations and Stochastic Analysis Seminar, University of Illinois at Urbana-Champaign, Nov. 2007.
- Expected exit time for symmetric stable processes from unbounded domains, Lisbon PORTUGAL, invited for one week by Prof. Pedro Freitas, Sep. 2007.
- Isoperimetric bounds for eigenvalues of triangles, Scattering and Spectral Theory Seminar, Purdue University, Sep. 2007.
- Sharp integrability condition for an exit time for stable processes from unbounded domains, Probability Seminar, Purdue University, Sep. 2007.
- Estimates for the first eigenvalue of triangles and other planar domains, Wrocław POLAND, June 2006.
- Intrinsic ultracontractivity for a relativistic process, Karpacz POLAND, 2003.