

KIRIL DATCHEV

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Education:

- 2010 Ph.D Mathematics (expected), University of California, Berkeley.
Thesis title: “Distribution of resonances for manifolds with hyperbolic funnels”.
Thesis advisor: Maciej Zworski.
- 2005 B.A. Mathematics, Columbia University, New York, NY. (summa cum laude)
- 2005 B.A. Physics, Columbia University, New York, NY.
- 2003 – 2004 Ecole Polytechnique, Palaiseau, France. Diplôme d’Ingenieur coursework.

Research Interests:

Microlocal Analysis, Scattering Theory, Dispersive PDE, Mathematical Physics.

Research Papers:

1. “Resonance free regions for nontrapping manifolds with cusps”, available at [arXiv:0910.5283](https://arxiv.org/abs/0910.5283).
2. “Solitary waves for the Hartree equation with a slowly varying potential”, with Ivan Ventura, submitted, available at [arXiv:0904.0834](https://arxiv.org/abs/0904.0834).
3. “Fast soliton scattering by attractive delta potential wells”, with Justin Holmer, published in *Communications in Partial Differential Equations*, Vol. 34, No. 9, pp. 1074–1113 (2009).
4. “Local smoothing for scattering manifolds with hyperbolic trapped sets”, published in *Communications in Mathematical Physics*, Vol. 286, No. 3, pp. 837–850 (2009).

Online Expository Papers:

1. “A perturbative approximation for the nonlinear Schrödinger equation”, available at <http://math.berkeley.edu/~datchev/app.pdf>.
2. “Introduction to the method of complex scaling”, available at <http://math.berkeley.edu/~datchev/res.ps>.

Research Talks:

1. “Quantum decay rates for manifolds with hyperbolic ends”
November 2009, Differential Geometry/PDE/Inverse Problem Seminar, U of Washington.
November 2009, Scattering and Spectral Theory Seminar, Purdue University.
2. “Solitary waves for the Hartree equation with a slowly varying potential”
July 2009, Workshop on Spectral Theory and Harmonic Analysis, ANU, Canberra.
July 2009, Minisymposium on Nonlinear Waves, SIAM Annual Meeting, Denver.
April 2009, Special Session, AMS Western Sectional Meeting, San Francisco.

3. “Local smoothing for scattering manifolds with hyperbolic trapped sets”
August 2008, Symposium on Scattering and Spectral Theory, Serrambi, Brazil.
February 2008, Bay Area Microlocal Analysis Seminar, Stanford University.
4. “Fast soliton scattering by delta potential wells”
November 2007, Analysis/PDE Seminar, University of California, Berkeley.
October 2007, Special Session, AMS Western Sectional Meeting, Albuquerque.

Upcoming Talks:

1. December 2009, Analysis/PDE Seminar, Stanford University.
2. April 2010, Special Session, AMS Western Sectional Meeting, Albuquerque.
3. June 2010, Special Session, AMS-SMM Joint Meeting, Berkeley.

Honors and Awards:

- 2008 Outstanding Graduate Student Instructor, UC Berkeley Graduate Division.
 2008 Phoebe A. Hearst Fellow, UC Berkeley Math Department.
 2004 – 2005 Josephine de Kármán Fellow.
 2003 – 2005 Barry M. Goldwater Scholar.

Employment:

- 2007 – Graduate Student Researcher, UC Berkeley.
 2005 – 2008 Graduate Student Instructor in calculus, linear algebra, and differential equations for four semesters, UC Berkeley.
 2002 – 2003 Undergraduate Researcher, Booster Neutrino Experiment, Fermilab, Batavia, IL.
 2002 – 2003 Teaching Assistant, honors calculus, Columbia University.

Summer Schools:

- 2009 Mathematics Research Communities, Inverse Problems Program, Snowbird, Utah.
 2008 Symposium on Scattering and Spectral Theory, Recife and Serrambi, Brazil.
 2008 Clay Mathematics Institute Summer School on Evolution Equations, ETH Zürich.
 2006 Summer School in Analysis and Geometry, Princeton University.

Other Conferences Attended:

- Apr. 2009 Singularities @ MIT, in honor of Richard Melrose, MIT.
 Feb. 2009 Southern California Analysis and PDE Conference, UCLA.
 Oct. 2008 BIRS Workshop: Mathematical Theory of Resonances, Banff, Canada.
 Jan. 2008 Southern California Analysis and PDE Conference, UC San Diego.
 Jan. 2008 Conference on Mathematical Physics and Geometric Analysis, Fields Institute, Toronto, Canada.
 June 2007 Analysis of PDE, Evian-les-bains, France.
 May 2007 Geometric Analysis in Nice, Université de Nice Sophia Antipolis, France.
 May 2007 Hyperbolic Operators and Scattering, in honor of Vesselin Petkov, Université Bordeaux 1, France.

References:

- Maciej Zworski, University of California, Berkeley (advisor)
 Nicolas Burq, Université Paris-Sud 11, Orsay
 Michael Christ, University of California, Berkeley
 Gunther Uhlmann, University of Washington, Seattle
 Jon Wilkening, University of California, Berkeley (concerns teaching)