

PAUL SMITH

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RESEARCH INTERESTS      Partial differential equations (PDE), real-variable harmonic analysis,  
Schrödinger maps, nonlinear wave and dispersive PDE

EDUCATION      **UNIVERSITY OF CALIFORNIA, LOS ANGELES**

Doctoral candidate under Terence Tao.  
Ph.D. in Mathematics expected Spring 2011  
C.Phil. in Mathematics, 2009  
M.A. in Mathematics, 2007

**COLLEGE OF WILLIAM AND MARY, WILLIAMSBURG, VA**

B.S. in Mathematics, 2006, *summa cum laude*, highest honors in Mathematics

AWARDS      · Dissertation Year Fellowship (UCLA, 2010/2011)  
· NSF RTG Fellowship (UCLA, 2009/2010)  
· Chancellor's Prize (UCLA, 2007)  
· William and Mary Prize in Mathematics (2006)  
· Thomas Jefferson Prize in Natural Philosophy (William and Mary, 2006)  
· Phi Beta Kappa, Alpha of Virginia (William and Mary, 2005)  
· Barry M. Goldwater Scholar (2004, 2005)  
· Chappell Fellowship (William and Mary, 2003)  
· James Monroe Scholar (William and Mary)

PUBLICATIONS AND PREPRINTS      *Conditional global regularity of Schrödinger maps: sub-threshold dispersed energy*, preprint (2010), arXiv:1012.4048.

*Geometric renormalization below the ground state*, preprint (2010), submitted, arXiv:1009.6227.

*The graphs for which the maximum multiplicity of an eigenvalue is two*, Linear and Multilinear Algebra **57** (2009), no. 7, 713—736 (with C. R. Johnson and R. Loewy).

*Boundary Nevanlinna-Pick interpolation for generalized Nevanlinna functions*, unpublished (2006), arXiv:math/0609653.

*Positive extension problems for a class of structured matrices*, Linear Algebra Appl. **381** (2004), 165—195 (with V. Bolotnikov).

- TEACHING ASSISTANTSHIPS
- Ordinary differential equations, *upper-division*, Spring 2009
  - Ordinary differential equations, *upper-division*, Winter 2009
  - Differential geometry, *upper-division*, Fall 2008
  - Calculus for life sciences, *lower-division*, Spring 2008
  - Differential geometry, *graduate level*, Winter 2008
  - Differential topology, *graduate level*, Fall 2007
  - Differential equations, *lower-division*, Spring 2007
  - Linear algebra, *upper-division*, Winter 2007
  - Calculus of several variables, *lower-division*, Winter 2006
- SELECTED TALKS
- Conditional global regularity of Schrödinger maps* (UCLA, Winter 2011)
- Local smoothing for water waves* (UCLA, Winter 2010)
- Finite-time blow-up for wave maps* (UCLA, Fall 2009)
- From Littlewood-Paley to heat flows* (UCLA, Spring 2009)
- The Coulomb gauge* (UCLA, Winter 2009)
- Wave maps with small critical norm* (UCLA, Fall 2008)
- Strichartz estimates* (UCLA, Spring 2008)
- CONFERENCES ATTENDED
- Southern California Analysis and PDE conference, UCLA, November 2010
  - AMS Sectional Meeting, UCLA, November 2010
  - Oberwolfach Workshop: Nonlinear waves and dispersive equations, Mathematisches Forschungsinstitut Oberwolfach, September 2010
  - The Thirteenth Rivière-Fabes Symposium on Analysis and PDE, University of Minnesota, April 2010
  - Southern California Analysis and PDE conference, UC Irvine, November 2009
  - PIMS Workshop: Nonlinear Dispersive and Geometric Evolution Problems: Singularities and Asymptotics, University of British Columbia, August 2009
  - Dispersive Equations and Nonlinear Waves, Institut Henri Poincaré, June 2009
  - Nonlinear Partial Differential Equations and Free Boundary Problems, Warwick University, June 2009
  - Southern California Analysis and PDE conference, UCLA, February 2009
- REFERENCES
- Terence Tao (advisor), UCLA, [tao@math.ucla.edu](mailto:tao@math.ucla.edu)
- Rowan Killip, UCLA, [killip@math.ucla.edu](mailto:killip@math.ucla.edu)
- Monica Visan, UCLA, [visan@math.ucla.edu](mailto:visan@math.ucla.edu)
- Ioan Bejenaru, U. Chicago, [bejenaru@math.uchicago.edu](mailto:bejenaru@math.uchicago.edu)