

# Baoping Liu

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- CONTACT INFORMATION Beijing International Center for Mathematical Research *E-mail:* [baoping@math.pku.edu.cn](mailto:baoping@math.pku.edu.cn)  
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Peking University *Phone:* (+86)10-62744115  
Beijing, China, 100871
- APPOINTMENTS **2015 -** Assistant Professor at Beijing International Center for Mathematical Research  
**Peking University**, Beijing, China  
**2012 - 2015** Dickson Instructor at **University of Chicago**
- EDUCATION **2006 - 2012: University of California, Berkeley**, Berkeley, California USA  
Ph.D. Mathematics.  
Advisor: Daniel Tataru  
**2002-2006: Peking University**, Beijing, China  
Bachelor of Science in Mathematics.
- GRANTS **Thousand Young Talents**, Principal Investigator, 2018.1 - 2020.12  
**NSFC 11601017**, Principal Investigator, 2017.1 - 2019.12  
**NSFC 11631002**, Member, 2017.1 - 2021.12
- RESEARCH INTERESTS Nonlinear partial differential equations, harmonic analysis, dynamical system, mathematical physics.
- RESEARCH PAPERS [1] H. Jia, B. Liu, W. Schlag and G. Xu. *Global center stable manifold for the defocusing energy critical wave equation with potential.*  
arXiv:1706.09284 accepted by American Journal of Math.  
[2] H. Jia, B. Liu, W. Schlag and G. Xu. *Generic and non-generic behavior of solutions to the defocusing energy critical wave equation with potential in the radial case.*  
International Mathematics Research Notices, Vol. 2017, No. 19, pp. 5977-6035.  
[3] C. Kenig, A. Lawrie, B. Liu and W. Schlag. *Channels of energy for the linear radial wave equation.*  
Advances in Mathematics, Volume 285, Pages 877–936  
[4] C. Kenig, A. Lawrie, B. Liu and W. Schlag. *Stable soliton resolution for exterior wave maps in all equivariance classes.*  
Advances in Mathematics, Volume 285, Pages 235-300  
[5] H. Jia, B.Liu and G. Xu. *Long time dynamics of defocusing energy critical 3 + 1 dimensional wave equation with potential in the radial case.*  
Communications in Mathematical Physics, Volume 339, Issue 2, pp 353-384  
[6] B. Liu and P. Smith. *Global wellposedness of the equivariant Chern-Simons-Schrödinger equation.*  
Accepted by Revista Matemática Iberoamericana 32 (2016), no. 3, 751-794.

[7] B. Liu, P. Smith and D. Tataru. *Low regularity solution for Chern-Simons-Schrödinger equation* International Mathematics Research Notices, Volume 2014, issue 23, pages 6341-6398

[8] B. Liu, *A-priori bound for KdV below  $H^{-\frac{3}{4}}$*   
Journal of Functional Analysis 268 (3), 501-554

#### VISITS

Nov 2017, Yonsei University, Korea (1 week)  
Aug 2017, Fields Institute, Canada (three weeks)  
April 2017, Bielefeld University, Germany (two weeks)  
July 2016, Institut des Hautes Études Scientifiques, France (two weeks)  
November 2015, Mathematical Sciences Research Institute, Berkeley, USA (one month)  
July 2014, Hausdorff center of Mathematics, Bonn, Germany (one month)  
July 2009, Pacific Institute for the Mathematical Sciences, Vancouver, Canada (3 weeks)  
June 2009, L'Institut Henri Poincare, Paris, France (one month)

#### PRESENTATIONS

Yamagata-Peking-Tohoku Joint workshops for harmonic analysis and PDE, Japan, March 2018  
Analysis and PDE seminar, Yonsei University, November 2017  
Geometry seminar, Nanjing University, October 2017  
PDE seminar, Nanjing Normal University, October 2017  
Workshops on PDE, Chinese Mathematical Society 2017 Annual Conference, October 2017  
Workshops on Geometric analysis and hyperbolic equations, Academy of Mathematics and System Sciences, Beijing, China, July 2017  
PDE Seminar, Bielefeld University, Germany, April 2017  
Analysis and PDE seminar, Xiamen Univeristy, December 2016  
Analysis and PDE Seminar, Tsinghua University, Beijing, China, April 2016  
Analysis and PDE seminar, University of California, Berkeley, USA, Nov 2015  
Analysis seminar, Beijing Normal University, Beijing, China, Oct 2015  
PDE Seminar, University of Science and Technology, He Fei, China, Oct 2015  
Workshop 'Longtime Behavior of Nonlinear Waves', Bielefeld University, June 2015  
Colloquium, University of Southern California, Dec 2014  
Calderon-Zygmund Analysis Seminar, University of Chicago. October 2014  
Closing workshop, Hausdorff Trimester Program 'Harmonic Analysis and PDE' Aug 2014  
Colloquium, Georgia Southern University, Nov 2013  
PDE seminar, Peking University, Sep 2013  
Workshop: Nonlinear Waves and Dispersive Equations, Oberwolfach, August 2013  
Analysis Seminar, Wisconsin Madison. March 2013  
Analysis Seminar, Northwestern. January 2013  
Calderon-Zygmund Analysis Seminar, University of Chicago. October 2012  
Analysis seminar, UC Irvine, March 2012  
AMS meeting at the University of Hawaii, Honolulu, March 2012  
Analysis and PDE Seminar, John Hopkins University, November 2011

Student Harmonic Analysis and PDE Seminar, Berkeley, Sp2011, Fall 2010, Fall 2009, Spring 2009

CONFERENCE  
ATTENDED

Yamagata-Peking-Tohoku Joint workshops for harmonic analysis and PDE, Japan, March 2018  
Focus Program on Nonlinear Dispersive Partial Differential Equations and Inverse Scattering, Fields Institute, Canada, August 2017  
Workshops on Geometric analysis and hyperbolic equations, Academy of Mathematics and System Sciences, Beijing, China, July 2017  
Nonlinear Waves and Dispersive Equations, Bonn, Oberwolfach, June 2017  
Nonlinear waves, Institut des Hautes Études Scientifiques, France, July 2016  
Longtime Behaviour of Nonlinear Waves, Bielefeld University, June 2015  
Hausdorff Trimester Program ‘Harmonic Analysis and PDE’ August 2014  
Nonlinear Waves and Dispersive Equations, Bonn, Oberwolfach, August 2013  
NSF-CBMS Regional Research Conference in the Mathematical Sciences, KSU, June 2013  
AMS Spring 2012 Western Sectional Meeting, University of Hawaii, Honolulu, March, 2012  
CBMS Conference on Global Harmonic Analysis, Kentucky Summer 2011  
Southern California Analysis and PDE conference, UCLA, November 2010  
Nonlinear waves and dispersive equations, Oberwolfach, September 2010  
The 13th Rivière-Fabes Symposium on Analysis and PDE, University of Minnesota, April 2010  
Hot Topics: Black Holes in Relativity, MSRI, Sep 2009  
Nonlinear Dispersive and Geometric Evolution Problems, PIMS Workshop, UBC, August 2009  
Analysis of nonlinear wave equations and applications in engineering, Banff, August 9-14, 2009  
Dispersive Equations and Nonlinear Waves, Institut Henri Poincaré, June 2009  
AMS Section Meeting: Special Session on Nonlinear Dispersive Equations, San Francisco, April 2009  
Carolina Meeting on Harmonic Analysis and PDE, UNC, Chapel Hill, Jan 2009  
Red Raider Mini-symposium: Non-linear Analysis, PDEs and Applications, Texas Tech U., Oct 2009  
Analysis on Singular Spaces, MSRI, Aug - Dec 2008  
Microprogram on Nonlinear Partial Differential Equations, MSRI, summer 2007.

AWARDS

**2010** Outstanding Graduate Student Instructor Award, UC Berkeley.  
**2006-2007** Simons Graduate Fellowship, UC Berkeley

TEACHING  
EXPERIENCE

Teaching at Peking University **Spring 2018** Calculus II (For business major)  
**Fall 2017** Linear Algebra (For economy major)  
**Fall 2016** Calculus I (For biology major)  
**Spring 2016** Calculus II (For biology major)

Teaching at University of Chicago

**Spring 2015** Math16300 Honor Calculus, two sections, Instructor  
**Fall 2014** Math16100 Honor Calculus, two sections, Instructor  
**Winter 2014** Math20400 Real Analysis, two sections, Instructor  
**Fall 2013** Math20300 Real Analysis, two sections, Instructor

**Spring 2013** Math20500 Real Analysis, Math16300 Honor Calculus 3, Instructor  
**Winter 2013** Math20400 Real Analysis, Instructor  
**Fall 2012** Math20300 Real Analysis, Instructor

Teaching at University of California, Berkeley

**Summer 2012** Math185, Complex Analysis, Instructor  
**Spring 2012** Math16B, Analytical Geometry and Calculus with Professor J. Harrison  
**Spring 2011** Math16B, Analytical Geometry and Calculus with Professor D. Sarason  
**Fall 2009** Math16B, Analytical Geometry and Calculus with Professor J. Silver  
**Spring 2009** Math54, Linear Algebra and Differential Equations with Professor J. Wagoner  
**Spring 2008** Math54, Linear Algebra and Differential Equations, with Professor A. Chorin  
**Fall 2007** Math1A, Calculus with Professor Ole H. Hald

#### REFERENCES

Daniel Tataru (Ph.D. advisor), Berkeley, email: [tataru@math.berkeley.edu](mailto:tataru@math.berkeley.edu)

Carlos Kenig (Postdoc mentor), U. Chicago, email: [cek@math.uchicago.edu](mailto:cek@math.uchicago.edu)

Wilhelm Schlag (Postdoc mentor), U. Chicago, email: [schlag@math.uchicago.edu](mailto:schlag@math.uchicago.edu)

Herbert Koch, Universität Bonn, email: [koch@math.uni-bonn.de](mailto:koch@math.uni-bonn.de)

#### SERVICE

Organize PDE/Analysis Seminar at BICMR, Peking University Sep 2015- present

Organize Calderon Zygmund Analysis Seminar at University of Chicago Oct 2013 - June 2015

Instructor for Summer REU at U.Chicago in 2014 with topic *Equilibria in Nonlinear Systems*;  
Summer REU at U.Chicago in 2015 with topic *Introduction to Wave equation*

Article referee for Discrete and Continuous Dynamical System - A(2), Communications in Mathematical Physics(2), Nonlinear Analysis Series B, Nonlinearity

Last updated: May 22, 2018