Xingjie Li

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EDUCATION

University of Minnesota, Twin Cities
PhD candidate in Mathematics   Sep 2012 (expected)
Adviser: Prof. Mithchell Luskin   GPA: 3.984/4.0
Thesis: *The Development and Analysis of Atomistic-to-Continuum Coupling Methods*

Fudan University, Shanghai, China
B.S. in Mathematics,   Jul 2007
Adviser: Prof. Wenbin Chen   GPA: 3.6/4.0 (top 5%)
Thesis: *Energy-Conserved Splitting FDTD Methods for Maxwell Equations*

RESEARCH EXPERIENCE

Brown University, The Division of Applied Mathematics
Postdoctoral Prager Assistant Professor   since Jul 2012

University of Minnesota
Research Assistant under the guidance of Prof. Mitchell Luskin.   2009−2012
Research Interests include numerical analysis, multiscale methods in material science and multiscale dynamical systems in crystalline solids.

Fudan University
Research Assistant under the guidance of Prof. Wenbin Chen.   2006−2007
Research Interests include numerical analysis, computational electromagnetics and mathematical modeling.

TEACHING EXPERIENCE

Spring 2012: Math 1272 Calculus II	Teaching assistant
Spring 2011: Math 1155 Intensive Precalculus	Teaching assistant
Fall 2008: Math 1271 Calculus I	Teaching assistant
Spring 2008: Math 1372 IT Calculus II	Teaching assistant
Fall 2007: Math 1031 College Algebra and Probability	Teaching assistant

ACADEMIC COMMUNICATIONS

- **Presentation:** 2012 SIAM Annual Meeting.
  Blended Force-based Quasicontinuum Methods. Jul. 9 - Jul. 13, 2012, Minneapolis, MN, USA.
- **Workshop:** The Heterostructured Nanocrystalline Materials workshop at ICERM.
  Poster: Blended Force-based Quasicontinuum Methods. May. 30 - Jun. 01, 2012, Brown University, RI, USA.
- **Invited talk:** Numerical Analysis colloquium at Fudan University, Shanghai, CH.
  Positive-Definiteness of the Blended Force-Based Quasicontinuum Method. Mar. 12, 2012.
- **Invited talk:** Nonlinear PDE colloquium at Oxford University, UK.
  Stability Analysis of The Atomistic and QC Approximations for The EAM Model, Oxford University, Oct. 25, 2011.

- **Presentation:** The 11th US National Congress on Computational Mechanics the 2011 minisymposium.
  An Analysis of The Quasi-Nonlocal Quasi-continuum Approximation Of The Embedded Atom Model. Jul. 25 - Jul. 29, 2011, Minneapolis, MN, USA.
- **Conference:** The 2011 von Neumann Symposium on Multimodel and Multialgorithm Coupling for Multiscale Problems. Jul. 04-Jul. 07, Snowbird Resort, Snowbird, UT.
- **Visiting scholar:** University of Warwick, UK. Oct 15, 2011 - Nov 5, 2011.
  Project: Blended Force-Based Quasicontinuum Method for General Potentials.

PUBLICATIONS

Journal Papers

1. Xingjie Li, Mitchell Luskin and Christoph Ortner. Positive-definiteness of the Blended Force-Based Quasicontinuum Method. *Multiscale Modeling and Simulation, to appear. arXiv:1112.2528v1.*

2. Xingjie Li and Mitchell Luskin. Lattice Stability for Atomistic Chains Modeled by Local Approximations of the Embedded Atom Method. *Computational Materials Science, to appear. arXiv:1108.4473v1.*

3. Brian Van Koten, Xingjie Li, Mitchell Luskin, and Christoph Ortner. A Computational and Theoretical Investigation of the Accuracy of Quasi-continuum Methods. *In Ivan Graham, Tom Hou, Omar Lakkis, and Rob Scheichl, editors, Numerical Analysis of Multiscale Problems. Springer, to appear. arXiv:1012.6031.*

4. Xingjie Li and Mitchell Luskin. A Generalized Quasi-Nonlocal Atomistic-to-Continuum Coupling Method with Finite Range Interaction. *IMA Journal of Numerical Analysis, 2011, 10.1093/imanum/drq049.*

5. Xingjie Li and Mitchell Luskin. An Analysis of the Quasi-Nonlocal Quasicontinuum Approximation of the Embedded Atom Model. *International Journal for Multiscale Computational Engineering, 2010, accepted.*

6. Wenbin Chen, Xingjie Li and Dong Liang. Energy-Conserved Splitting Finite-Difference Time-Domain Methods for Maxwell's Equations in Three Dimensions. *SIAM Journal on Numerical Analysis, 2010, Vol.48, Number 4, pp.1530-1554.*

7. Wenbin Chen, Xingjie Li and Dong Liang. Energy-conserved splitting FDTD methods for Maxwell equations. *Numerische Mathematik, 2008, Volume 108, Number 3, pp. 445-485.*

8. Wenbin Chen, Xingjie Li and Dong Liang. Symmetric Energy-Conserved Splitting FDTD Scheme for the Maxwell's Equations. *Communications in Computational Physics, 2008, vol. 6, issue 4, pp. 804-825.*

Current Papers

1. Liping Gao, Xingjie Li and Wenbin Chen. New Energy identities and Super Convergence Analysis of the Energy Conserved Splitting FDTD methods for 3D Maxwell's Equations. *submitted.*

2. Alex Shapeev, Xingjie Li, Christoph Ortner and Mitchell Luskin. A Computational Investigation of the Blended Force-Based Quasicontinuum (B-QCF) Method. *manuscript.*

3. Xingjie Li and Christoph Ortner. Blended Force-Based Quasicontinuum Method for General Potentials: Formulation and Consistency. *In preparation.*

AWARDS

- University of Minnesota Graduate School Doctoral Dissertation Fellowship 2011-12
- First prize of China Undergraduate Mathematical Contest in Modeling in 2006
- First Prize of Renmin Scholarship at Fudan University of the 2003 -2004 academic year