

## JING LI

Associate Professor

Department of Mathematical Sciences

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### Education:

September 1998 – September 2002     Doctor of Philosophy in Applied Mathematics, September 2002,  
Courant Institute of Mathematical Sciences, New York University.

September 1988 – July 1995     Master of Science in Mathematics, July 1995,  
Bachelor of Science in Mathematics, July 1992,  
Department of Mathematics, Shandong University, China.

### Employment:

August 2008 – present     *Associate Professor*  
Department of Mathematical Sciences, Kent State University.

August 2003 – July 2008     *Assistant Professor*  
Department of Mathematical Sciences, Kent State University.

October 2002 – July 2003     *Post-Doctoral Research Associate*  
Center for Aerospace Structures,  
University of Colorado at Boulder,  
Research Advisor: Charbel Farhat.

September 1998 – September 2002     *Research and Teaching Assistant*  
Courant Institute of Mathematical Sciences, New York University.

September 1995 – July 1998     *Research Assistant*  
Institute of Atmospheric Physics, Chinese Academy of Sciences,  
China.

### Visiting Positions:

July–August, 2006     *Visiting Research Associate*  
July–August, 2007     Institute for Computational and Mathematical Engineering,  
Stanford University.

### Research Interests:

Numerical Analysis, Scientific Computing, Numerical PDEs, Parallel Computation.

## Grants:

- *A Conference on New Frontiers in Numerical Analysis and Scientific Computing*, National Science Foundation DMS-1247539, 09/1/2012 – 08/31/2013, \$23,000, (Richard Varga, Co-PI).
- *SCREMS: High Performance Scientific Computing Environment*, National Science Foundation DMS-0821071, 09/1/2008 – 08/31/2010, \$113,522, (Lothar Reichel, Arden Ruttan, Paul Farrell, Xiaoyu Zheng, Co-PIs).
- *Scalable Parallel Multilevel Domain Decomposition Methods*, National Science Foundation DMS-0612574, 08/15/2006 – 07/31/2009, \$84,203.

## Publications:

1. Jing Li and Xuemin Tu, *A Non-Overlapping Domain Decomposition Method for Incompressible Stokes Equation with Continuous Pressures*, SIAM J. Numer. Anal., in press.
2. Xuemin Tu and Jing Li, *A Unified FETI-DP Approach for Incompressible Stokes Equations*, Internat. J. Numer. Methods Engrg., 94 (2013), pp. 128–149.
3. Jing Li, Charbel Farhat, Philip Avery, and Radek Tezaur, *A Dual-Primal FETI Method for Solving a Class of Fluid-Structure Interaction Problems in the Frequency Domain*, Internat. J. Numer. Methods Engrg., 89 (2012), pp. 418–437.
4. Jing Li and Xuemin Tu, *Convergence Analysis of a Balancing Domain Decomposition Method for Solving a Class of Indefinite Linear Systems*, Numer. Linear Algebra Appl., 16 (2009), pp. 745–773.
5. Xuemin Tu and Jing Li, *BDDC for Nonsymmetric Positive Definite and Symmetric Indefinite Problems*, in Lecture Notes in Computational Science and Engineering, volume 70, Springer, 2009, pp. 75–86.
6. Xuemin Tu and Jing Li, *A Balancing Domain Decomposition Method by Constraints for Advection-diffusion Problems*, Commun. Appl. Math. Comput. Sci., 3 (2008), pp. 25–60.
7. Jing Li and Olof B. Widlund, *On the Use of Inexact Subdomain Solvers for BDDC Algorithms*, Comput. Methods Appl. Mech. Engrg., 196 (2007), pp. 1415–1428.
8. Jing Li and Olof B. Widlund, *BDDC Algorithms for Incompressible Stokes Equations*, SIAM J. Numer. Anal., 44 (2006), pp. 2432–2455.
9. Jing Li and Olof B. Widlund, *FETI-DP, BDDC, and Block Cholesky Methods*, Internat. J. Numer. Methods Engrg., 66 (2006), pp. 250–271.
10. Jing Li, *A Dual-Primal FETI Method for Incompressible Stokes Equations*, Numer. Math., 102 (2005), pp. 257–275.

11. Charbel Farhat and Jing Li, *An Iterative Domain Decomposition Method for the Solution of a Class of Indefinite Problems in Computational Structural Dynamics*, Appl. Numer. Math., 54 (2005), pp. 150–166.
12. Charbel Farhat, Jing Li, and Philip Avery, *A FETI-DP Method for the Parallel Iterative Solution of Indefinite and Complex-Valued Solid and Shell Vibration problems*, Internat. J. Numer. Methods Engrg., 63 (2005), pp. 398–427.
13. Charbel Farhat, Philip Avery, Radek Tezaur, and Jing Li, *FETI-DPH: A Dual-Primal Domain Decomposition Method for Acoustic Scattering*, J. Comput. Acoustics, 13 (2005), pp. 499–524.
14. Jing Li and Olof Widlund, *A BDDC Preconditioner for Saddle Point Problems*, in Lecture Notes in Computational Science and Engineering, volume 55, Springer, 2006, pp. 407–414.
15. Charbel Farhat, Jing Li, Michel Lesoinne, and Philip Avery, *A FETI Method for the Solution of a Class of Indefinite or Complex Second- or Fourth-Order Problems*, in Lecture Notes in Computational Science and Engineering, volume 40, Springer, 2004, pp. 19–33.
16. Jing Li, *Dual-Primal FETI Methods for Solving Stokes/Navier-Stokes Equations*, in Domain Decomposition Methods in Science and Engineering, Natl. Auton. Univ. Mex., Mexico, 2003, pp. 225–231.

#### **Editorial Work:**

Managing editor for the journal *Electronic Transactions on Numerical Analysis*.

#### **Conference Presentations and Invited Talks:**

1. Invited speaker, AMS Southeastern Sectional Meeting, Special Session on Large Scale Matrix Computation, University of Kentucky, March 2010.
2. Invited speaker, Fast Algorithms for Scientific Computing, A Symposium in Honor of Olof B. Widlund on the Occasion of His 70th Birthday, New York University, September 2008.
3. Contributed talk, 10th Copper Mountain Conference on Iterative Methods, Copper Mountain, CO, April 2008.
4. Contributed talk, 13th Copper Mountain Conference on Multigrid Methods, Copper Mountain, CO, March 2007.
5. Contributed talk, 8th IMACS International Symposium on Iterative Methods in Scientific Computation, College Station, Texas, November 2006.
6. Contribute talk, Finite Element Circus, Penn State University, November 2006.

7. Invited talk, Department of Aerospace Engineering, Old Dominion University, September 2006.
8. Minisymposium talk, SIAM Conference on Parallel Processing for Scientific Computing, San Francisco, February 2006.
9. Invited talk, Institute for Computational and Mathematical Engineering, Stanford University, August 2005.
10. Minisymposium talk, 16th International Conference on Domain Decomposition Methods, New York City, January 2005.
11. Contributed talk, ETNA conference: Following the Flows of Numerical Analysis, Kent, Ohio, May 2003.
12. Contributed talk, 6th IMACS International Symposium on Iterative Methods in Scientific Computing, Denver, Colorado, March 2003.
13. Supported student talk, 7th Copper Mountain Conference on Iterative Methods, Copper Mountain, Colorado, March 2002.
14. Supported student talk, 14th International Conference on Domain Decomposition Methods, Cocoyoc, Mexico, January 2002.