Curriculum Vitae

1   Personal Details

Xiliang Lu, Professor
School of Mathematics and Statistics
Wuhan University
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2   Higher Education

1996.9 - 2000.6, B.Sc. Mathematics, Peking University.
2000.7 - 2002.7, M.Sc. Mathematics, National University of Singapore.
2002.7 - 2006.8, Ph.D. Mathematics, National University of Singapore.

3   Experience

2003.7 - 2006.1 Teaching Assistant, National University of Singapore.

2006.2 - 2006.8 Research Assistant, National University of Singapore.

2006.9 - 2007.1 Research Fellowship, National University of Singapore.

2007.1 - 2007.6 Visiting Scholar, University of Maryland, College Park.

2007.8 - 2010.7 Postdoc Fellowship, RICAM, Austria.

2010.7 - 2014.11 Associated Professor, Wuhan University.

2014.11 - present Professor, Wuhan University.

4   Research Interests

Computational Inverse Problem and Optimal Control
Sparse Reconstruction Algorithm and Applications
Numerical Partial Differential Equations

5   Research Project

The algorithm and analysis of optimal control of partial differential equations with complicate convex constraint, Nation Nature Science Foundation of China (Grant No.11101316), China, 2012-2014. (PI)

Numerical method for inverse problem with sparse constraint, National Nature Science Foundation of China (Grant No. 11471253), China, 2015-2018. (PI)

Adaptive immerse interface (boundary) method and its application to computational fluid dynamics, Nation Nature Science Foundation of China (Grant No.91230108), China, 2013-2015. (Co-PI)

6   Publications

1. Xiliang Lu, Ping Lin and Jianguo Liu, Analysis of a Sequential Regularization Method for the Unsteady Navier-Stokes Equations, Mathematics of Computation, 77 (2008), 1467-1494.

2. Ping Lin, Jianguo Liu and Xiliang Lu, Long Time Numerical Solution of the Navier-Stokes Equations Based on a Sequential Regularization Formulation, SIAM Journal on Scientific Computing 31 (2008), 398-419.

3. Xiliang Lu and Ping Lin, Error Estimate of the Nonconforming P1 Finite Element Method for the Penalized Navier-Stokes Equations, Numerische Mathematik, 115 (2010), 261-287.

4. Karl Kunisch, Kewei Liang, and Xiliang Lu Optimal Control for the Elliptic System with Polygonal State Constraints, SIAM Journal on Control and Optimization, 48 (2010), 5053-5072.

5. Karl Kunisch and Xiliang Lu, Optimal Control for Multi-phase Fluid Stokes Problems, Nonlinear Analysis, Theory, Methods & Applications, 74 (2011), 585-599.

6. Bangti Jin and Xiliang Lu, Numerical Identification of a Robin Coefficient in Parabolic Problems, Mathematics of Computation, 81 (2012), 1369-1398.

7. Karl Kunisch and Xiliang Lu, Optimal Control for an Elliptic System with Convex Polygonal Control Constraints, IMA Journal of Numerical Analysis, 33 (2013), 875-897.

8. Tao He, Xiliang Lu, Xiaoqun Wu, Jun-an Lu and WeiXing Zhen, Optimization-based Structure Identification of Complex Dynamical Networks, Physica A: Statistical Mechanics and its Applications, 392 (2013), 1038-1049.

9. Karl Kunisch and Xiliang Lu, Optimal Control for Elliptic Systems with Pointwise Euclidean Norm Constraints on the Controls. Mathematical Programming, 142 (2013), 461-483.

10. Shuangbing Guo, Dingfang Li, Hui Feng and Xiliang Lu, Extremal Eigenvalues of the Sturm-Liouville Problems with Discontinuous Coefficients, Numerical Mathematics: Theory, Method and Application, 6 (2013), pp. 657-684.

11. Qinian Jin and Xiliang Lu, A Fast Nonstationary Iterative Method with Convex Penalty for Inverse Problems in Hilbert Spaces, Inverse Problems, 30, no. 4 (2014): 045012.

12. Matthias Gehre, Bangti Jin and Xiliang Lu, An Analysis of Finite Element Approximation in Electrical Impedance Tomography, Inverse Problems, 30, no. 4 (2014): 045013.

13. Qibing Fan, Yuling Jiao and Xiliang Lu, A Primal Dual Active Set Algorithm with Continuation for Compressed Sensing, IEEE Transection on Signal Processing, 62 (2014), pp. 6276–6285.

14. Zhifeng Weng, Jerry Zhijian Yang and Xiliang Lu, Two-Level Quadratic Equal-Order Stabilized Method for the Stokes Eigenvalue Problem, International Journal of Computer Mathematics, 92 no. 2 (2015), pp. 337-348.

15. Zhiyuan Sun, Yuling Jiao, Bangti Jin and Xiliang Lu, Numerical Identification of a Sparse Robin Coefficient, Advance in Computational Mathematics, 41 (2015), pp. 131-148.

16. Kewei Liang, Xiliang Lu and Jerry Zhijian Yang, Finite Element Approximation to the Extremal Eigenvalue Problem for Inhomogenous Materials, Numerische Mathematik, 130 no.4 (2015), pp 741-762.

17. Yuling Jiao, Bangti Jin and Xiliang Lu, A Primal Dual Active Set with Continuation Algorithm for the ℓ_0-Regularized Optimization Problem, Applied and Computational Harmonic Analysis, 39 no. 3 (2015), pp. 400-426.

18. Zhousheng Ruan, Jerry Zhijian Yang and Xiliang Lu, Tikhonov Regularisation Method for Simultaneous Inversion of the Source Term and Initial Data in a Time-Fractional Diffusion Equation, East Asian Journal on Applied Mathematics, 5 no. 3 (2015), pp. 273-300.

19. Bangti Jin, Raytcho Lazarov, Xiliang Lu and Zhi Zhou, A Simple Finite Element Method for Boundary Value Problems with a Riemann-Liouville Derivative, Journal of Computational and Applied Mathematics, 293 (2016), pp. 94-111.

20. Qibing Fan, Yuling Jiao, Xiliang Lu and Zhiyuan Sun, L^q Regularization for Inverse Robin Problem, Journal of Inverse and Ill-Posed Problems, Volume 24 (2016), pp. 3-12

21. Zhousheng Ruan, Zhijian Yang and Xiliang Lu, An Inverse Source Problem with Sparsity Constraint for The Time-Fractional Diffusion Equation, Advances in Applied Mathematics and Mechanics, 8 (2016), pp. 1-18.

22. Zheng-Fen Jin, Zhongping Wan, Yuling Jiao and Xiliang Lu, An Alternating Direction Method with Continuation for Nonconvex Low Rank Minimization, Journal of Scientific Computing, 66 (2016), pp 849-869.

23. Zhifeng Wenga, Jerry Zhijian Yang and Xiliang Lu, Two-grid Variational Multiscale Method with Bubble Stabilization for Convection Diffusion Equation, Applied Mathematical Modelling, 40 (2016), pp. 1097-1109.

24. Xinxin Liu, Xiliang Lu, Huanfeng Shen, Qiangqiang Yuan, Yuling Jiao, and Liangpei Zhang, Stripe Noise Separation and Removal in Remote Sensing Images by Consideration of the Global Sparsity and Local Variational Properties, IEEE Transactions on Geoscience and Remote Sensing, 54 (2016), 3049-3060.

25. Yuling Jiao, Qinian Jin, Xiliang Lu and Weijie Wang, Alternating Direction Method of Multipliers for Linear Inverse Problems, SIAM Journal on Numerical Analysis, 54 (2016), pp. 2114-2137.

26. Zhifeng Weng, Jerry Zhijian Yang and Xiliang Lu, A stabilized finite element method for the convection dominated diffusion optimal control problem, Applicable Analysis, Accepted.
    DOI: http://dx.doi.org/10.1080/00036811.2015.1114606