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**Jinchao Xu** and **Lu Wang\*** ([wanglupku@gmail.com](mailto:wanglupku@gmail.com)), 65 Rio Robles East, #3423, San Jose, CA 95134, and **Xiaozhe Hu**. *Discretizations and Solvers for Coupled PDEs*. Preliminary report.

In this talk, I will report some theoretical and numerical results on the integrated study of robust discretization and efficient solvers for discretized partial differential equations. Using the framework of fast auxiliary space preconditioning (FASP) method, I will provide some examples to show briefly how to develop optimal iterative algorithms for solving finite element systems on unstructured grids for PDEs. (Received February 19, 2015)