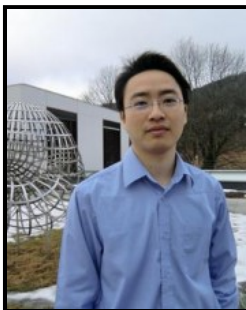




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Computational Mathematics Seminar Series

Finite Element Methods for the Stochastic Allen-Cahn Equation with Gradient-type Multiplicative Noises**Yi Zhang, University of Tennessee**

Postdoc

Digital Media Center 1034
March 17, 2015 - 03:30 pm**Abstract:**

In this talk, we study two fully discrete finite element methods for the stochastic Allen-Cahn equation with a gradient-type multiplicative noise that is white in time and correlated in space. The sharp interface limit of this stochastic equation formally approximates a stochastic mean curvature flow. Strong convergence with rates are established for both fully discrete methods. The key ingredients are bounds for arbitrary moments and Holder estimates in the L_2 and H_1 norms for the strong solution of the stochastic equation. Numerical results are presented to gauge the performance of the proposed fully discrete methods and to study the interplay of the geometric evolution and gradient type noises. This is the joint work with Xiaobing Feng and Yukun Li.

Speaker's Bio:

Yi Zhang received his Ph.D. in Mathematics in 2013 from Louisiana State University. He is currently a postdoc at the University of Tennessee, Knoxville. His research interests include finite element methods for fourth order variational inequalities and optimal control problems, and numerical solutions for stochastic partial differential equations.

This lecture has a reception @ 03:00 pm