Frontiers of Scientific Computing Lecture Series

Phase Field Models and Simulations of Some Interface Problems

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Johnston Hall 338
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Abstract:
In this talk, Dr. Du will report some recent works on the phase field modeling and simulation of interface problems in materials science and biology. Particular examples include the studies of deformation of biomimetic vesicle membranes and nucleation in anisotropic elastic solids. We discuss various theoretical and computational issues related to phase field models and present some simulations results. We also discuss how to connect geometry, topology and analysis closely within a phase field framework.

Speaker's Bio:
Dr. Qiang Du received his BS degree from the University of Science and Technology of China in 1983 and PhD from Carnegie-Mellon University in 1988. After first serving as a Dickerson instructor at the University of Chicago, he has held academic appointments at several universities and national labs including Michigan State, Iowa State, Carnegie Mellon, Hong Kong Science and Technology and Argonne. He is presently the Verne Willaman Professor of Mathematics and Materials Science at Penn State University. Dr.Du has published over 100 scientific papers and has been invited to speak at many research institutions and international conferences. He is also serving on editorial boards of several journals including SIAM Journal of Numerical Analysis, Discrete and Continuous Dynamic Systems, Applied Mathematics Research Exp., etc. Dr. Du received the Feng Kang prize in scientific computing in 2005, the faculty outreach and extension award at Iowa State University in 2000, the Frame faculty teaching award at Michigan State University in 1992, and the Eberly college of science medal at the Pennsylvania State University in 2006.

This lecture has a reception.

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