

COLLOQUIUM

DEPARTMENT OF MATHEMATICS AND STATISTICS
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Scientific Computation and Mathematical Modeling in Materials Science
and Engineering

Abstract

In this talk, I'll discuss scientific computation, ordinary and partial differential equation solvers, together with the Method of Lines. This method is a powerful and accurate numerical technique for solving time-dependent partial differential equations. Its applications, combined with mathematical modeling and physical experiments, provide new insights into material interfacial diffusion in microscale, and into reaction-diffusion-convection flow. I will also briefly illustrate numerical simulation and mathematical modeling in signal processing.

372 Science and Engineering Building

Thursday, November 29th, 2001

3:00 to 4:00 P.M.

**(Refreshment at 2:30 to 3:00 P.M. in Room 368,
Science and Engineering Building)**

About the speaker

Dr. Wen Zhang has been an assistant professor at the Department of Mathematics and Statistics at Oakland University since 1998. She received her B.S. in computational mathematics from Peking University, China, M.S. and Ph.D. in applied mathematics from Southern Methodist University, Dallas. Her research interests include scientific computation and applications of mathematical models and numerical simulations. Besides working at universities, she also worked as a research assistant at the Institute of Mechanics, Chinese Academy of Sciences, and as a postdoctoral research associate at Oak Ridge National Laboratory. She has been actively involved in interdisciplinary research projects and collaborations with researchers in other fields. She has 24 refereed journal publications and supervised one M.S. student and one Ph.D. student (co-advised).