Industrial mathematics: the 1998 CRSC workshop

Abstrak

Traditional mathematics often plays a vital role in the solution of industrial problems. This volume describes industrial problems presented at a graduate-level modeling workshop designed to improve the graduate students' vision about the type of mathematics and science they should pursue whether they aspire to academic or nonacademic postgraduate careers. The problems represent a broad spectrum of mathematical topics and applications including statistics, signal processing, fluid dynamics, ODE, and PDE, optimization, and numerical analysis. This volume can be used as a reference for mathematical modeling, signal processing, PDE, and applied control courses.
Industry representatives presented the following topics for graduate students to investigate during the ten-day workshop: Curvature Modeling in THUNDER Actuators; Maximizing Deflection While Minimizing Power Consumption in a Piezoelectric Actuator Design; Mathematical Modeling of High Power Amplifier (HPA) and HPA Linearization Through a Predistorter; Time Dependent Consolidation of Fine Powders; High Precision, High Accuracy Control of Fluid Microdispenser Under Variable Load; and Mass Transport and Surface Reaction of Immunoassay.