

COLLOQUIUM

DEPARTMENT OF MATHEMATICS AND STATISTICS
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Time and spacial discretization for evolution problems arising from contact mechanics

Abstract

At the beginning of my talk I will present an idea of numerical approach to the ordinary differential equations (ODE), based on a time discretization technique. Next, I will discuss a simple class of partial differential equations (PDE) which lead us to an elliptic problem in linear algebra. I will consider its Galerkin approximation and show a basic result providing a convergence of Galerkin method and its error estimates. I will also present an idea of finite element method (FEM) for elliptic problems. Finally I will pass to evolution problems and show, how to apply both time and spatial discretization technique in this case. In order to illustrate how it works practically, I will present my recent result concerning numerical analysis of an evolution contact problem in mechanics.

Tuesday, September 15, 2015
3 - 4 PM
Room 135 Dodge Hall

(Refreshments at 2:30-3:00 PM in the kitchen area adjacent to 368 MSC)