The Department of Mathematical Sciences Proudly Presents

Colloquium

Fall 2012

Formulation of Conservation Laws

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November 8th, 2012

Abstract

Conservation laws are the equations which express that the rate of change of an extensive quantity in a bounded region of a continuous body (mass, momentum, energy) is balanced by its flux across the boundary. Examples arise from acoustics, gas dynamics, and models of traffic flow. The equations are of first order, are nonlinear, and their solution over a large interval of time typically involves the formation of shocks and discontinuities. We will provide an introduction to the mathematical methods involved, and to different concepts of solution.