

## Department Colloquium

Speaker: Robert Kipka

Date: Friday, December 4

Time: 2:30 p.m.

Place: Jeffery 234

Title: "Multidirectional Mean Value Inequalities"

**Abstract:** "During recent decades nonsmooth functions have played increasingly important roles in areas of mathematics such as optimization, control, and partial differential equations. This talk introduces a generalization of Clarke and Ledyaev's *multidirectional mean value inequality*, a very useful and interesting theorem of nonsmooth analysis.

In order to introduce this topic to a general audience, I will spend some time motivating and explaining fundamental concepts of nonsmooth analysis such as Fréchet subgradient and the original multidirectional mean value inequality. During the second half of the talk I will motivate and explain a recent generalization of this inequality developed during the past year."