

MATHEMATICS COLLOQUIUM

DISTINGUISHED LECTURE SERIES

VARIATIONAL ANALYSIS: NEW TRENDS AND APPLICATIONS

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Abstract: Variational analysis has been well recognized as a rapidly growing and fruitful area in mathematics motivated mainly by the study of constrained optimization and equilibrium problems, while also applying perturbation ideas and variational principles to a broad class of problems and situations that may be not of a variational nature. One of the most characteristic features of modern variational analysis is the intrinsic presence of nonsmoothness, which naturally enters not only through initial data of the problems under consideration but largely via variational principles and perturbation techniques applied to a variety of problems with even smooth data. Nonlinear systems and variational systems in applied sciences also give rise to nonsmooth structures and motivate the development of new forms of analysis that rely on generalized differentiation.

In this talk we discuss some new trends and developments in variational analysis and its numerous applications. It is mostly based on the authors recent 2-volume book *Variational Analysis and Generalized Differentiation, I: Basic Theory, II: Applications*, Springer-Grundlehren, 2006. Applications concern various fields of mathematics, operations research, and applied science, particularly constrained and multiobjective optimization, equilibria, dynamical and control systems governed by ODEs and PDEs, engineering, physics, mechanics, economics, ecology, etc. The talk does not require preliminary knowledge on the subject.

Date: Thursday, April 24, 2008
Time: 4:00pm - 5:00pm
Place: J. Wiener Lecture Hall, MAGC 1.302

Refreshments will be served at 3:55pm.

For further information or for special accommodations, contact Dr. Karen Yagdjian at 381-2145, via email at yagdjian@utpa.edu, or visit www.math.panam.edu/colloquia.html