



UNSW
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DEPARTMENT OF APPLIED MATHEMATICS APPLIED SEMINAR SERIES 2007

The Seminar Series of the Department of Applied Mathematics, UNSW, Sydney is dedicated to the announcement, dissemination and discussion of research in mathematics and its applications. A fundamental aim of the Seminar Series is to feature lectures that inform in a manner that makes the subject accessible to the audience, including non-specialists.

SPEAKER: Professor Joachim Gwinner, Institut für Mathematik, Fakultät für Luft- und Raumfahrttechnik, Universität der Bundeswehr München, Germany.

TITLE: A Variational Approach to Inequality Constrained Problems in Operations Research and Mechanics.

Abstract: Variational Inequalities (VI) have now established as a versatile mathematical model to treat various inequality constrained problems encountered in different fields like operations research and mechanics. We apply this variational approach to study equilibria of distributed markets, traffic equilibria in networks, and elliptic boundary value problems with Signorini boundary conditions that arise in unilateral contact mechanics and in fluid flow in porous media.

We also develop numerical schemes for Signorini problems using variational discretisation schemes for PDEs such as the Finite Element Method or the Boundary Element Method.

In this seminar, we will present a recent extension of the VI methodology to inequality constrained problems with random data.

TIME AND VENUE: 2pm, Thursday 15 March 2007, Room 4082, Red Centre.



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