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GIS/dp

## KOLLOQUIUM

Professor Nicholas Zabaras  
Cornell University, Ithaca, USA

**Thema: MATERIALS-BY-DESIGN: MATHEMATICAL AND  
COMPUTATIONAL CHALLENGES**

**Zeit: Freitag, 14. Oktober 2005, 14:00 Uhr c.t.**

**Ort: Technikerstrasse 13, Hörsaal B619**

### **Kurzfassung:**

We will highlight a number of mathematical, computational and statistical developments towards the design of materials processes leading to products of desired properties. We aim to point to techniques needed for the control of microstructure-sensitive properties leading to a materials-by-design approach. Materials processes of interest include thermo-mechanical processes, solidification, crystal growth and other.

Issues to be discussed include multiscale stochastic modeling and design, information-theoretic approaches for linking length scales, statistical techniques for exploring structure/property/process relations, stochastic homogenization techniques and the role of uncertainty in materials design.

### **Über den Vortragenden:**

After completing doctoral work in Theoretical and Applied Mechanics, Professor Zabaras joined the faculty of the Mechanical Engineering Department at the University of Minnesota, Minneapolis, MN. He became a Cornell faculty member in 1991. Zabaras is a member of the American Society of Mechanical Engineers, the American Academy of Mechanics and of the Society for Industrial and Applied Mathematics. He received a Presidential Young Investigator Award from the National Science Foundation in 1991.

*Gäste sind herzlich willkommen!*