ulm university universität
uulm

Fakultät für Mathematik und Wirtschaftswissenschaften
Institut für Stochastik

Universität Ulm | 89069 Ulm | Germany

Professor Dr. Volker Schmidt

Helmholtzstraße 18
89081 Ulm, Germany

Tel: +49 731 50-23532
Fax: +49 731 50-23649
volker.schmidt@uni-ulm.de
http://www.uni-ulm.de/stochastik/

21. Juni 2016

Einladung zum Vortrag

von

Dr. Tomasz Wejrzanowski

Warsaw University of Technology, Poland

Numerical modeling in design of novel engineering materials

In this talk we consider various aspects of computational design of novel engineering materials. This is an essential part of modern strategies for the design of materials, where manufacturing is based on an understanding of the structure-property relationships. It requires the development of advanced numerical methods and tools for assistance, complementing or even replacing empirical studies. In particular, design of novel materials combines three fundamental areas of materials science: characterization, modeling and manufacturing. Advances in computer science in recent decades have opened up new vistas of applying numerical methods in each of these areas, very often creating a logical sequence in the design of specific materials structures and properties.
Three groups of materials will be discussed in this talk: nanometals, particulate composites and open-cell foams. These materials, apparently different from each other when applications are considered, reveal very similar microstructures. In particular, each of them can be represented by models consisting of polyhedrons, which divide the space into objects called grains or pores in the case of nanometals, composites or foams, respectively. Notably, computer simulations were conducted in parallel for all three groups of materials, where the numerical modeling usually was a part of a larger project involving an academia-industry partnership, i.e., it was possible to analyze problems related with real materials and to verify the theoretical findings.

Termin: **Dienstag, 19. Juli 2016, 14.00 Uhr**

Ort: **Universität Ulm, Helmholtzstr. 18, Raum E60**

Der Vortrag findet im Rahmen des Forschungsseminars des Institutes für Stochastik statt.
Alle Interessenten sind herzlich eingeladen.

gez. V. Schmidt