

Technikerstraße 13/7
A-6020 Innsbruck
Telefon: +43 512 507 6071 oder 6097

E-Mail: mathematik@uibk.ac.at
<http://www2.uibk.ac.at/mathematik/>
Fax: +43 512 507 2920

MATHEMATIKKOLLOQUIUM

Das Institut für Mathematik lädt zu folgendem Vortrag ein:

Dr. Klaus Sapelza

Modeling and Scientific Computing - CMCS
Ecole Polytechnique Federale de Lausanne

Multilevel Preconditioners for Elliptic Problems with Multiple Scales

In this presentation we will learn about methods for the solution of multiscale problems both from an analytical and a numerical point of view.

After an overview of the recent developments in this vast field, we study two representative multiscale techniques which are both well suited for parallel computing environments and both have comparable performance and accuracy.

Then, we focus our attention on an aggregation-based two-level overlapping Schwarz domain decomposition preconditioner. We study its theoretical properties and show its robustness with respect to the discretization parameter and strong variations in the multiscale coefficients of our model problem. A new aggregation algorithm is proposed according to the suggestions issuing from the theory.

Finally, an application of this preconditioning technique to a two-phase flow problem is presented.

Zeit: Donnerstag, den 15. November 2007 um 17:15 Uhr

Ort: Viktor-Franz-Hess-Haus, Technikerstraße 25, HS D

Alexander Ostermann

Gäste sind herzlich willkommen!