MATHEMATISCHES KOLLOQUIUM

Professor Guido Kanschat

Universität Heidelberg

"Monolithic Multilevel Methods for Systems of Partial Differential Equations with Conservation Properties"

Fast solution of incompressible flow problems requires preconditioners respecting their saddle point structure. Since the performance of block-structured methods is limited by the condition number of the Schur complement, we focus on monolithic multigrid methods for the whole system. They are based on standard embedding and restriction operators for the individual factor spaces. We employ smoothers based on overlapping domain decomposition methods which implicitly operate on the divergence free subspace of the velocity. We show analysis for divergence-conforming discontinuous Galerkin methods for the Stokes problem as well as applications to coupled flow problems, radiative transfer, and poroelasticity.

Ort: Universität Duisburg-Essen, Fakultät für Mathematik, Thea-Leymann-Str. 9, 45127 Essen, Raum WSC-S-U-4.02

Zeit: Mittwoch, 28. November 2018 um 17:15 Uhr

Vor dem Vortrag gibt es ab 16:45 Uhr Gelegenheit zum Gespräch bei Kaffee, Tee und Keksen in Raum WSC-S-4.05.

Die Dozenten der Mathematik