Workshop on Adaptive Methods with Applications in Fluid Dynamics

Berlin, April 25 – 27, 2012

Erhard-Schmidt-Hörsaal des Weierstraß-Instituts für Angewandte Analysis und Stochastik

Wednesday, April 25, 2012	
12:00 – 13:00	Registration
13:00 – 13:10	Opening Volker John (WIAS Berlin)
13:10 – 13:50	Ralf Kornhuber (FU Berlin) **Hierarchical error estimates for elliptic problems**
13:50 – 14:30	Simona Perotto (MOX Milano) **The impact of anisotropic mesh adaptation on CFD: A metric based approach**
14:30 – 14:50	Coffee break
14:50 – 15:30	Thomas Apel (Universität der Bundeswehr München) **Remarks on anisotropic finite elements with focus on interpolation and a posteriori error estimation**
15:30 – 16:10	Alain Dervieux (INRIA France) **Goal-oriented anisotropic mesh adaptation based on a priori estimates**
16:10 – 16:30	Coffee break
16:30 – 17:10	Jörn Behrens (Universität Hamburg) **Efficiency considerations in adaptive mesh refinement for geosciences applications**
17:10 – 17:50	Claudia Hertel (TU Dresden) **Moving meshes for cell center grids**

Thursday, April 26, 2012	
09:00 – 09:40	Slavko Brdar (Universität Freiburg) **Numerical simulations of atmospheric flows on the basis of DUNE and COSMO**
09:40 – 10:20	Carsten Carstensen (HU Berlin) **Optimal adaptive FEM for the Stokes equations**
10:20 – 10:40	Coffee break
10:40 – 11:20	Vincent Heuveline (Karlsruher Institut für Technologie) **Goal-oriented adaptivity for tropical cyclones**
11:20 – 12:00	Thomas Richter (Universität Heidelberg) **Goal-oriented error estimation for fluid-structure interactions**
12:00 – 14:00	Lunch
14:00 – 14:40	Gerard Gorman (Imperial College UK) **Hybrid MPI-OpenMP parallelization of anisotropic mesh adaptivity**
14:40 – 15:20	Rolf Rannacher (Universität Heidelberg) **Goal-oriented space-time adaptivity in the finite element Galerkin method for the nonstationary Navier–Stokes equations**
15:20 – 15:40	Coffee break
15:40 – 16:20	Kaspar Müller (KTH Royal Sweden) **Towards an adaptive finite element method for turbulent incompressible flow with variable density**
16:20 – 17:00	Malte Braack (Christian-Albrechts-Universität zu Kiel) **Stabilized finite elements for Navier-Stokes on varying spatial meshes**
19:00	Conference Dinner

Friday, April 27, 2012	
09:00 – 09:40	Jens Lang (TU Darmstadt) **Adaptive time integrators in computational fluid dynamics**
09:40 – 10:20	Joachim Rang (TU Braunschweig) **Adaptive time step control for the incompressible Navier–Stokes equations**
10:20 – 10:40	Coffee break
10:40 – 11:20	Alfred Schmidt (Universität Bremen) **Adaptive finite elements for a melting problem with capillary surface**
11:20 – 12:00	Swetlana Schyschlowa (WIAS Berlin) **On proper orthogonal decomposition methods for incompressible flows**
12:40	End of the workshop