him
HAUSDORFF
RESEARCH INSTITUTE
FOR MATHEMATICS

universität bonn

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Trimester Program on

Analysis and Numerics for High-Dimensional Problems

Organizers: Michael Griebel, Wolfgang Hackbusch, Markus Hegland, Christoph Schwab

Partial differential equations related to high-dimensional parameter spaces are a major challenge in science, engineering and finance. Here, the well-known curse of dimension prevents an efficient treatment by standard numerical discretization for most of these problems. The resulting enormous computational challenges cannot be met merely by larger computers, but require fundamentally new mathematical and algorithmic ideas. These can only be envisioned by an interdisciplinary attempt which involves modeling, analysis, stochastics and numerics. To this end, we bring together leading experts from these areas.

Selected planned activities

• Workshop on Tensor Products for High-Dimensional Problems

• Workshop on Sparse Grids and Applications

• Workshop on Dimension Reduction and Manifold Learning

• Workshop on Theoretical Aspects of High-Dimensional Problems
  and Information-Based Complexity

• Workshop on High-Dimensional Aspects of Stochastic PDEs

Furthermore, the HDA11, the 4th Workshop on High-Dimensional Approximation, will -- embedded in the trimester program -- be held in Bonn.

Call for participation: The Hausdorff Research Institute offers visiting positions for the whole period of the trimester program (for senior scientists, postdocs and PhD students).
The deadline for applications is September 30, 2010. Please send applications (including CV and, for postdocs and PhD students, a letter of recommendation) preferably using our online application form at **http://www.him.uni-bonn.de/high-dimensional-problems** or by e-mail to the Director of HIM, Prof. Dr. Matthias Kreck (kreck@him.uni-bonn.de). In addition numerous fellowships for shorter periods are available.