

Workshop

Tensor Methods in Multi-Dimensional Boundary-Value and Spectral Problems

MPI MiS Leipzig, May 3-5, 2010

Organizers:

Prof. Dr. W. Hackbusch and PD DrSci. B. Khoromskij
in cooperation with
Prof. E. Tyrtysnikov (INM RAS Moscow) and Prof. Dr. R. Schneider
(TU Berlin)

Scientific Program - Schedule:

Monday, May 3:

14:00 - 14:15 Opening
14:15 - 15:00 **Boris Khoromskij**
Prospects of tensors numerical methods in scientific computing
15:00 - 15:45 **Sergey Dolgov**
Tensor approximations for elliptic PDEs with jumping coefficients
15:45 - 16:15 Coffee Break
16:15 - 17:00 **Olga Lebedeva**
Eigenvalue solvers based on TT and QTT formats
17:00 - 17:30 Coffee Break & Discussions

Tuesday, May 4:

09:45 - 10:30 **Wolfgang Hackbusch**
Minimal subspaces
10:30 - 11:15 **Ivan Oseledets**
Development and applications of TT algorithms
11:15 - 11:45 Coffee Break
11:45 - 12:30 **Vladimir Kazeev**
Optimization techniques in the construction of tensor approximations
12:30 - 14:00 Lunch Break

14:00 - 14:45 **Heinz-Juergen Flad**

Parametrices and Green operators for quantum mechanical Hamiltonians

14:45 - 15:30 **Reinhold Schneider**

Density matrix renormalization group (DMRG): Algorithm of a relaxation method in TT format

15:30 - 16:00 Coffee Break

16:00 - 16:45 **Dmitry Savostyanov**

Fast and accurate tensor recompression algorithms using Krylov spaces and Wedderburn transformations

16:45 - 17:15 Coffee Break & Discussions

19:30 - 22:00 Conference Dinner (at the “Auerbachs Keller”)

Wednesday, May 5:

09:45 - 10:30 **Nazar Andrienko**

TT-based algorithms for a hypersingular integral equation

10:30 - 11:15 **Hongjun Luo**

Variational transcorrelated method

11:15 - 12:00 Coffee Break & Concluding discussions