

September 23, 2003

Tentative Programme of the Workshop  
**Reliable Methods in Mathematical Modelling**  
**RMMM-2003**

Place: University of Jyväskylä  
AGORA Building

Thursday, September 25, 2003

Chairman: *P. Neittaanmäki* (Auditorium 1)

10:00 - 10:10 Opening.

10:10 - 10:50 E. Stein, M. Rüter: *Adaptive Modeling and Finite Element Approximations in Structural Mechanics.*

10:50 - 11:30 S. Repin: *Functional Type A Posteriori Error Estimates for Problems in the Theory of Viscous Fluids.*

11:30 - 12:00 Coffee Break.

Chairman: *S. Sauter* (Auditorium 1)

12:00 - 12:40 C. Carstensen: *Adaptive Finite Elements for Relaxed Methods (FERM) in Computational Microstructures.*

12:40 - 13:20 M. Feistauer: *Discontinuous Galerkin Finite Element Method: A Reliable Tool for Mathematical Modelling.*

13:20 - 15:00 Lunch Break.

Chairman: *E. Stein* (Auditorium 1)

- 15:00 - 15:30 C. Eck: *A Two-Scale Method for Phase Transitions with Dendritic Microstructure.*
- 15:30 - 16:00 S. Repin, S. Sauter, A. Smolianski: *A Posteriori Estimation of the Dimension Reduction Errors.*
- 16:00 - 16:30 S. Grosman: *Robust Local Problem Error Estimation for a Singularly Perturbed Reaction-Diffusion Problem on Anisotropic Finite Element Meshes.*
- 16:30 - 17:00 Discussions.
- 18:00 - 20:00 Coctail Party (AGORA, place will be announced later).

### Friday, September 26, 2003

Chairman: *T. Strouboulis* (Auditorium 1)

- 09:00 - 09:40 J. Rappaz: *Analysis and Numerical Simulation of Motions of a Glacier.*
- 09:40 - 10:20 C. Carstensen, S. Sauter: *A Posteriori Error Analysis for Elliptic PDEs on Domains with Complicated Structures.*
- 10:20 - 10:40 Coffee Break.

Chairman: *C. Carstensen* (Auditorium 1)

- 10:40 - 11:20 T. Strouboulis: *Robustness of Error Estimators for an Important Class of Engineering Problems.*
- 11:20 - 12:00 S. Rjasanow: *Adaptive Cross Approximation and its Applications.*
- 12:00 - 14:00 Lunch Break.

Chairman: *M. Feistauer* (Auditorium ALFA)

14:00 - 14:30 S. Korotov, P. Neittaanmäki, S. Repin: *A Posteriori Error Estimation of “Quantities of Interest” for the Elliptic-Type Boundary Value Problems.*

14:30 - 15:00 M. Rech, S. Repin, S. Sauter, A. Smolianski: *A Posteriori Error Control and Adaptive Approximation for the Dirichlet Problem on Complicated Domains.*

15:30 - 16:00 M. Rüter, E. Stein: *Error-Controlled Adaptive Finite Element Methods in Elastic Fracture Mechanics.*

16:00 - 16:30 Coffee Break.

Chairman: *J. Rappaz* (Auditorium ALFA)

16:30 - 17:00 M. Frolov, P. Neittaanmäki, S. Repin: *On Theoretical and Numerical Justification of the Efficiency of Mesh Adaptation Based on the Duality Error Majorants.*

17:00 - 17:30 C. Pester: *A Posteriori Error Estimation on Spherical Domains.*

17:30 - 18:00 Discussions.

20:00 - 24:00 Beer Evening in Pubs.

Saturday, September 27, 2003

Chairman: *S. Rjasanow* (Auditorium 1)

- 09:30 - 10:00 J. Brandts: *A Novel Approach to the Algebraic Eigenvalue Problem.*
- 10:00 - 10:30 K. Kolman: *A Two-Level Method for Nonsymmetric Eigenvalue Problems.*
- 10:30 - 11:00 D. Kuzmin: *High-Resolution Finite Element Schemes Based on a Fully Multidimensional Flux Limiter of TVD Type.*
- 11:00 - 11:30 Coffee Break.

Chairman: *S. Repin* (Auditorium 1)

- 11:30 - 12:00 S. Korotov, J. Martikainen: *Comparative Study of A Posteriori Error Estimation in Terms of Linear Functionals for the Elliptic-Type Boundary Value Problems.*
- 12:00 - 12:30 P. Sváček: *Numerical Solution of Fluid Flow over a Moving Profile.*
- 12:30 - 13:00 T. Vejchodský: *Survey of A Posteriori Error Strategies for Linear Elliptic and Parabolic Problems.*
- 13:00 - 13:10 Closing.