Numerical Linear Algebra – Algorithms, Applications, and Training.

An NWO-JSPS joint Seminar.

Room E, EWI building, Delft University of Technology, Delft, The Netherlands.
April 10-13, 2012.

Program

Tuesday, April 10

9:30	Registration
10:00	Welcome *Martin van Gijzen*, Delft University of Technology.
10:15	Flash Talks: Posters.
10:45	Break
11:00	Look-back GMRES(m) for solving large nonsysmmetric linear systems. *Shao-Liang Zhang*, Nagoya University.
11:30	New developments in sparse matrix partitioning for parallel computations. *Rob Bisseling*, Utrecht University.
12:00	Lunch
2:00	Parallelization of variable preconditioned Krylov subspace method using multi-GPU. *Soichiro Ikuno*, Tokyo University of Technology.
2:30	Modularity graph clustering on the GPU. *Bas Fagginger Auer*, Utrecht University.
3:00	Coffee Break
3:30	A variant of IDRstab to remedy the residual gap. *Kensuke Aihara*, Tokyo University of Science.
4:00	IDR as a deflation method. *Gerard Sleijpen*, Utrecht University.
4:30	Reception and Poster Session.

Wednesday, April 11

9:30	Registration
10:00	Random shadow vectors in IDR(s): an explanation of its GMRES-like convergence. *Peter Sonneveld*, Delft University of Technology.
10:45	Break
11:00	IDR(s) for linear equations with multiple right-hand sides. *Kuniyoshi Abe*, Gifu University.
11:30	Flexible and multi-shift induced dimension reduction algorithms for solving large sparse linear systems. *Martin van Gijzen*, Delft University of Technology.
12:00	Lunch
2:00	A shift strategy for superquadratic convergence of the dqds algorithm for computing singular values. *Kensuke Aishima*, The University of Tokyo.
2:30	Efficient methods for least-norm regularization. *Marielba Rojas*, Delft University of Technology.
3:00	Coffee Break
3:30	A proposal of variant of BiCGSafe method based on optimized product of two polynomials. *Seiji Fujino*, Kyushu University.
4:00	Recursively deflated PCG for mechanical problems. *Cornelis Vuik*, Delft University of Technology.
7:00	Conference Dinner

Thursday, April 12

10:00	Discussion sessions
12:00	Lunch
1:00-6:00	Excursion

Friday, April 13

10:00	Numerical modeling and its solution techniques for multiphysic and multiscale heart simulator: UT-heart. *Takumi Washio*, The University of Tokyo.
10:30	Multigrid preconditioner for the Helmholtz equation based on a new discretization with complex coefficients. *Cornelis Oosterlee*, CWI and Delft University of Technology.
11:00	Coffee Break and Poster Session
12:00	Lunch
2:00	Forward-looking Session
4:00	Closing remarks *Martin van Gijzen*, Delft University of Technology.

Posters:

1. A more stable expansion basis for GCR and Orthodir.
   Lee Siaw Chong, Utrecht University.
2. A fast CUDA solver for large sparse matrices for MARIN.
   Martijn de Jong, Delft University of Technology.
3. Towards efficient preconditioned CG method on the GPU for bubbly flow problem.
   Rohit Gupta, Delft University of Technology.
4. Newton-Krylov methods in power flow and contingency analysis.
   Reijer Idema, Delft University of Technology.
5. Computing energy levels of the confined hydrogen atom.
   Karl Kästner, Delft University of Technology.
6. TRUST$_\mu$: Matlab software for large-scale non-negative regularization.
   Hoang Kien Nguyen, Delft University of Technology.
7. Fast algorithms for SSS matrix problems and their application to wind farm control.
   Yue Qiu, Delft University of Technology.
8. On shifted Laplace preconditioner combined with multigrid deflation for Helmholtz equation.
   Abdul Sheikh, Delft University of Technology.
9. Model-Reduced History Matching.
   Sławomir Szklarz, Delft University of Technology.
10. Acceleration of the 2D Helmholtz model HARES.
    Gemma van de Sande, Delft University of Technology.
11. A preconditioner for CG that does not need symmetry.
    Paulien van Slingerland, Delft University of Technology.
12. A full multigrid (FMG) method for a linear complementarity formulation of a normal contact problem.
    Jing Zhao, Delft University of Technology.

Please note:

- Registration is required to attend the talks. There is no registration fee.
- Lectures are 25 minutes plus 5 minutes for questions.