

GPU-Lab at DTU Informatics is a hardware facility associated with our research in algorithms and programming paradigms for GPU hardware accelerators. We develop new algorithms for optimization and simulation on this facility, and during this process we create dedicated software libraries and we develop methodologies needed for writing efficient GPU code.

We invite all those interested in scientific GPU programming to a 1/2-day workshop where we will present our current results and our future plans, and where distinguished experts will give their view on the future of GPU programming. The workshop will help to answer questions such as:

Is GPU computing for me?

Am I using my GPU accelerator in an optimal way?

Who can I contact to learn more or initiate a research collaboration?

## Program

- 9:00 – 9:30 Welcome + introduction to scientific GPU programming
- 9:30 – 10:30 Prof. Jan S. Hesthaven, Brown University: *GPU Accelerated High-Order Hybrid Methods for Shock Problems*  
Dr. Andreas Klöckner, New York University: *Run-Time Code Generation for Heterogeneous Computing: Methods and Applications in High-Order PDE Solvers*
- 10:30 – 10:45 Coffee
- 10:45 – 12:15 Six short presentations (15 minutes each):
- ▷ *Tuning of BLAS level 1 and 2* (Hans Henrik Sørensen, GPU-Lab)
  - ▷ *Accelerating interior point methods with GPUs for smart grid systems* (Nicolai Fog Gade-Nielsen, GPU-Lab)
  - ▷ *Very fast simulation of nonlinear water waves in very large numerical wave tanks on affordable graphics cards* (Allan P. Engsig-Karup, GPU-Lab)
  - ▷ *A high performance GPU-based framework for PDE prototyping* (Stefan L. Glimberg, GPU-Lab)
  - ▷ *Perspectives of GPU accelerators in flow engineering* (Jens Chr. Bennetsen, Rambøll Danmark A/S)
  - ▷ *RUMD: A molecular dynamics code optimized for GPUs* (Thomas Schröder, Glass & Time, RUC)
- 12:15 - 13:30 Networking and lunch

**Registration.** Please send an e-mail to Assoc. Prof. Allan P. Engsig-Karup (apek@imm.dtu.dk), Section for Scientific Computing, Department of Informatics and Mathematical Modelling, DTU.

**August 18, 2011 · 9:00–13:30 · Building 305, Room 053**

