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CBC Talk on Accelerating Finite Difference Method on Graphic Processors(GPUs) - April 29, 2010

We would like to announce the following talk, by Didem Unat on Thursday April 29:　Accelerating Finite Difference Method on Graphic Processors(GPUs). Didem is a visiting PhD student from University of California, San Diego (UCSD), and will be staying at Simula till mid-July.

Total number of participants: 15
Total number of guests outside of CBC: 1
Number of different nationalities represented: 6
Total number of speakers: 1
Total number of talks:1

GPUs offer significant performance improvements in data parallel applications such as stencil computations.
This talk summarizes an extensive study of optimizations and performance modeling of various 3D finite difference computations on GPUs.
The optimized implementations deviate no more than 11-28% from the performance predicted by our performance model. We will also discuss a GPU implementation of the 2D Aliev-Panfilov model as well as an implementation on multiple GPUs running under MPI.

Since GPU implementation of an application requires nontrivial knowledge about the underlying architecture, the topic of auto-generating these optimizations for GPUs will be addressed from a higher-level representation of the stencil computation. We will show some preliminary results for OpenMP to Cuda translation of 2D finite difference calculations.

What	▪ Talk
When	Apr 29, 2010 from 01:00 PM to 02:00 PM
Where	Bakrommet @ Simula
Contact Name	Xing Cai
Attendees	Anders Log Andrè Massing Aron Wahlberg Benjamin Kehlet Didem Unat Hans Petter Langtangen Johannes Ring Marie E. Rognes Ola Skavhaug Omar al-Khayat Stuart Clark Tomas Ruud Tor Gillberg Wenjie Wei Xing Cai
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