

# Scientific Computing

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## CBC Talk on A Case Study of GPUs in Scientific Computing: Low-Order FEM - September 3, 2010

Matt Knepley from University of Chicago will share a case study of GPUs in Scientific Computing, Friday September 3, at 11 o'clock in Bakrommet.

Total number of participants: 16  
 Total number of guests outside of CBC: 2  
 Number of different nationalities represented: 5  
 Total number of speakers: 1  
 Total number of talks: 1

### Abstract:

We present a model for scientific applications based upon a Python framework, in which linear algebra and solver work is handled by libraries, and integration, or physics, is handled by massively parallel accelerators, in this case a GPU, through the PyCUDA framework. We illustrate this paradigm by discussing the step-by-step development of a high performance, portable engine for low-order FEM integration.

Slides



### About the speaker:

Matt Knepley is a well known guest at CBC, and currently works at the University of Chicago.

His current research interests includes:

- Software for computational science
- Modeling of scientific computation
- Fast summation methods
- Radial basis function methods
- FEM and BEM, accelerated by fast solver
- Automated code generation for FEM and BEM
- Vortex particle methods
- Earthquake modeling
- Fracture mechanics
- Algorithms for massively multicore hardware, such as NVIDIA GPUs

For more information about Matt, please visit his website at [people.cs.uchicago.edu/~knepley/](http://people.cs.uchicago.edu/~knepley/)

<b>What</b>	▪ Talk
<b>When</b>	Sep 03, 2010 from 11:00 AM to 12:05 PM
<b>Where</b>	Bakrommet @ Simula
<b>Contact Name</b>	Hans Petter Langtangen
<b>Attendees</b>	Anders Helgeland Anders Logg Andre Massing Benjamin Kehlet Hans Petter Langtangen Johannes Ring Karen Støverud Kent-André Mardal Kristian Valen-Sendstad Lyudmyla Vynntska Margarete Jadamec Marie rognès Mikael Mortensen Ola Skavhaug Stuart Clark Svein Linge
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