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Challenges of Modern High Performance Computing

Tuesday 24 February 2015 10:00 (1 hour)

The first lecture is about the challenges modern computing is facing. Scientific questions with greater problem size are asked and data to be stored grows bigger and bigger. The increased demands on computational resources in science can be met running a collection of computers/nodes as a single large parallel computer. When there is adequate inter process communication between such a collection of independent nodes it becomes a high performance computer (HPC) able to compute large problems. The lecturer will give an overview over the development of HPC and modern application areas.

Targeted audience: This lecture targets scientists in general working with big data and using computer cluster to compute, analyze or collect data.

Benefits of attending the lecture: After this lecture, the attendees are expected to have a good understanding of the principles of high performance computing. The challenges science poses towards computer technologies and how it is handled.

Prerequisites: To draw maximum benefits of the lecture, the attendant should preferably have had some contact with a big computer cluster already.

Presenter: HARTMANN, Helvi (FIAS)

Session Classification: Bigger, Faster, High Perfomance Computing - and the importance of Message Passing