HP2C High Performance and High Productivity Computing

High Performance and High Productivity Computing Initiative
Kick-off meeting

Date: Tuesday 16th – Wednesday 17th March 2010.
Venue: Università della Svizzera italiana, via Buffi 13, 6904 Lugano, auditorium.

Aim of the meeting

The main objective of the meeting is introduce the PIs, co-PIs and collaborators of the approved HP2C projects in the programme objectives and organizations and to start collaboration and networking with the core team at USI and CSCS and between the projects.

Contribution expected from the projects

PIs are expected to present their project in about 20', plus time for questions. Presentations should deal especially with following aspects:

- A brief and generally accessible overview of the scientific vision, the models and solution methods.
- Discussion of algorithmic motifs used as well as current state of implementations – stay brief in trying to related to standard motifs/dwarfs; include performance aspects and scaling if applicable.
- Presentation of the team – PI/co-PI, people already working on the models/methods development; what people you are looking to add.

Program

Tuesday 16th March

12.00 – 13.00 Welcome buffet

13.00 – 14.15 Opening Session

The HP2C initiative: objectives and mode of operation
Prof. Thomas Schulthess, Director CSCS, HP2C director

Developments and priorities in system architectures and programming models
Dr. Sadaf Alam, Future Systems task leader, CSCS

14.15 – 14.45 Coffee break

14.45 – 17.45 Project presentations

14.45 – 15.15   Villard – Advanced gyrokinetic numerical simulations of turbulence in fusion plasma
15.15 – 15.45   Goedecker – Large scale density functional electronic structure calculations
15.45 – 16:15   Schenk – Large-Scale Parallel Nonlinear Optimization for 3D-Seismic Imaging
16.15 – 16.45   Lake – Computational Cosmology on the Petascale
16.45 – 17.15   Giamarchi – Modern Algorithms for Quantum Interacting Systems

17.15 – 17.45   Discussion

17.45 – 18:00 *HP2C in the framework of the national initiative for advanced computing*
Prof. Piero Martinoli, president of USI and of the HP2C steering committee

18.00 Presentation of the Institute of Scientific Computing at USI
Prof. Rolf Krause, Director ICS

19.30 Dinner
Ristorante Canvetto Luganese

Wednesday 17th March

8.00 – 10.30 Project presentation

8.00 – 8.30   Hutter – New Frontiers in ab initio Molecular Dynamics
8.30 – 9.00   Robinson-Rechavi – Selectome, looking for Darwinian evolution in the tree of life
9.00 – 9.30   Quarteroni – HPC for Cardiovascular System Simulations
9.30 – 10.00   Liebendörfer – Productive 3D Models of Stellar Explosions

10.00 – 10.30 Coffee break

10.30 – 12.30 Final session
Including organizational aspect of the program, coordination with core group, coordination of job advertisements, etc.

12.30 Buffet lunch and departure of participants

13.00 – 16.00 Time for dedicated meetings with the core group