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International Workshop SMQS-IP2011

The "International Workshop on Simulation and Manipulation of Quantum Systems for Information Processing (SMQS-IP2011)" will take place from 17 to 19 October 2011 in the Rotunda of the Jülich Supercomputing Centre. The goal of the workshop is to discuss methods to simulate and manipulate quantum systems for pure scientific and more applied purposes.

The magnetic moments of nuclei, atoms and molecules can exhibit strong quantum behaviour. Studying the dynamics of these systems is of great importance to exploit spins for quantum information processing. The exploitation of quantum effects, requiring coherent control of dissipative dynamics and entanglement control, is expected to have profound implications for future emerging technologies including nanotechnology, biotechnology and information technology.

Managing and designing complex quantum systems with specified behaviour requires a deep understanding of the cooperative behaviour of their components. Unravelling this cooperative behaviour requires intensive collaboration between theoreticians and experimenters. Mathematical and simulation tools will be crucial to gain new insights into the structure and dynamics of those quantum systems.

Invited talks will highlight recent developments in quantum annealing, open quantum systems, quantum computer hardware, optical lattices, equilibration and thermalization of quantum systems, quantum biology, and related topics.

More information on the workshop can be found at
http://www.fz-juelich.de/smqs-ip2011
(Contact: Prof. Dr. Kristel Michielsen, *k.michielsen@fz-juelich.de*)

CECAM-Jülich Summer School

From 12 to 16 September 2011, the CECAM-Jülich Summer School on "Fast Methods for Long-Range Interactions in Complex Systems" will take place at JSC.

Parallel computing and computer simulations of complex particle systems including charges have an ever increasing impact in a broad range of fields in the physical sciences, e.g. in astrophysics, statistical physics, plasma physics, material sciences, physical chemistry and biophysics. During the summer school, which is part of the CECAM-Jülich Node activities, methods and algorithms will be introduced and presented which reduce the computational complexity of the evaluation of long-range interactions which tend to dominate such simulation. These will include the fast multipole method, the Barnes-Hut tree method, and the multigrid or FFT-based methods. Parallelization of these methods will also be demonstrated and discussed in detail.

The school is aimed at PhD students and postdocs working in fields of computational science (in particular in physics, computational chemistry or numerical mathematics)

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who want to learn about modern methods and algorithms for the evaluation of long-range interactions, or who want to apply these techniques in their own simulation codes. More information is available at
http://www.fz-juelich.de/cecam-ss
(Contact: Dr. Godehard Sutmann, ext. 6746)

ISC11 in Retrospect

This year's International Supercomputing Conference and Exhibition, ISC11, took place in Hamburg from 19 to 23 June. Both the conference attendance and number of exhibitors set new records with more than 2100 attendees and 152 exhibitors, respectively.

JSC highlighted its role as one of the leading European high-performance computing centres with various presentations at its booth and its staff's contributions to the conference. JSC also organized the UNICORE booth and jointly with IPB (Serbia) and CSC (Finland) the PRACE booth and a BoF session on e-Infrastructures in Europe. The session provided an overview of HPC, Grid and future data infrastructures and attracted more than 50 participants.

Details and pictures from ISC11 can be found at
http://www.fz-juelich.de/ias/jsc/events/isc11.
(Contact: Dr. Walter Nadler, ext. 2324).

Foundation of BUX

At ISC11 in Hamburg, the Bull User group for eXtreme computing (BUX) was founded on 20 June 2011. BUX is an independent worldwide group of users that will cooperate to increase the capabilities of the large-scale, parallel scientific and technical computing solutions supplied by the company Bull, to promote the exchange of information and understanding of these systems, and to provide guidance to Bull on the essential development and support issues for large-scale technical systems. Bull, as an affiliate, is committed to supporting this new user group.

The objectives of BUX are:

- Sharing of experience between members and with Bull
- Giving Bull direct feedback and input, and helping to set priorities for the Group in terms of technology, service and support
- Networking with Bull HPC experts during BUX events
- Highlighting emerging technologies and helping foster long-term developments.

The seven founding members of BUX, to which Forschungszentrum Jülich also belongs, come from France, Germany, Spain and the UK. Five special interest groups have been established. Klaus Wolkersdorfer from JSC became the leader of the group "'Parallel File Systems"'. A first general meeting is planned from 6 to 7 October 2011 at RWTH Aachen University. More information is available at
http://www.bull.com/extreme-computing/bux.html
(Contact: Klaus Wolkersdorfer, ext. 6579)

Creation of the European Technology Platform on HPC

On 21 June 2011, ISC11 featured a PROSPECT Association discussion panel with the title "Creating a European Technology Platform for High Performance Computing". The session was moderated by Sergi Girona (BSC) with the participation of speakers from Eurotech, the European Commission, PROSPECT, LRZ, JSC, ClusterVision, T-Systems, Megware, T-Platforms, IBM-Deutschland, HP and ParTec. It was a great success.

PROSPECT prepared a vision document describing the main targets and aims to be reached by 2020 in terms of the HPC technology market in Europe. In the course of the event, this document and the Letters of Intent signed by the 28 PROSPECT members were handed in to the European Commission, represented by Mr. Fabianek. This was a sign of the PROSPECT Association's commitment and support of the creation of the Technology Platform on HPC in Europe (ETP).

From the discussions, it was concluded that there is a need for such an organization supported by industry, research organizations and the EC; the partnerships fostered by ETP could eventually help Europe to improve its industrial and scientific competitiveness.

The next step will involve the PROSPECT Association working with other players in order to achieve a consensus on the working structure of the future platform.
(Contact: Dr. Maria Ramalho, *m.ramalho@fz-juelich.de*)

European Lustre Workshop 2011

The European Open File System (EOFS) Group is organizing the first European Lustre Workshop in Paris from 26 to 27 September 2011. This will be a great opportunity for Lustre™ administrators and developers from Europe and worldwide to gather and exchange their experiences, developments, tools, good practices and more. Community members are invited to send proposals for presentations during this event. For more information, please see
http://www.eofs.eu
(Contact: Klaus Wolkersdorfer, ext. 6579)

Events

Workshop: From Computational Biophysics to Systems Biology 2011
Date: 20-22 July 2011
Venue: Forschungszentrum Jülich, Auditorium
Info: *http://www.fz-juelich.de/cbsb11/*

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