Open Day on 29 September 2013

Forschungszentrum Jülich cordially invites the public to an Open Day on Sunday, 29 September 2013. JSC will be open from 10:00 to 17:00 with the following highlights for all those interested: opportunity to view the supercomputers, 3D visualization of scientific simulations, distributed computing on smartphones, and the supercomputer simulator SuperResi.

Our education team will be on hand to inform visitors about opportunities to train as a mathematical technical software developer (MATSE), bachelor's courses in scientific programming and master's courses in technomathematics. In the exhibition about the Sustainable Campus in the foyer of the Central Library, JSC will present its activities on energy-efficient supercomputing. Furthermore, one question in the popular research rally for children is about JSC. For more information on the attractions at JSC, see *http://www.fz-juelich.de/ias/jsc/tdn13*

We are looking forward to your visit!
(Contact: Dr. Sabine Höfler-Thierfeldt, *s.hoefler-thierfeldt@fz-juelich.de*)

Traffic and Granular Flow 2013

For its tenth meeting, the conference "Traffic and Granular Flow" (TGF) returns to the location of its very first conference held in 1995 at Forschungszentrum Jülich. The conference will take place from 25 to 27 September 2013 and is organized in cooperation with the Institute for Theoretical Physics, University of Cologne. Originally initiated to disseminate new ideas by considering the similarities of traffic and granular flow, TGF'13 now covers a broad range of topics related to driven particle and transport systems. Besides granular flow and highway traffic, its scope includes data transport, pedestrian and evacuation dynamics, intercellular transport, swarm behaviour and collective dynamics of other biological systems. More information is available at *http://www.tgf13.de.*
(Contact: Prof. Armin Seyfried, *a.seyfried@fz-juelich.de*)

Funds for Helmholtz International Research Group Granted

Since 2012, the Helmholtz Association has promoted international cooperation through a limited number of International Research Groups (IRG), i.e. bi-lateral cooperations between scientists based at Helmholtz institutions and research groups abroad. In this year's round, the Plasma Simulation Lab at JSC received funding for a 3-year project on Scalable Kinetic Plasma Simulation Methods together with the Centre for Mathematical Plasma Astrophysics at the Katholieke Universiteit Leuven in Belgium. This was one of only 7 successful applications out of a total of 68 nationwide.

The new IRG will use the grant – which is matched by equivalent funding at KU Leuven – to perform research on innovative simulation techniques for studying nonlinear phenomena common to laser plasmas, planetary magnetospheres and plasma-

wall interactions, while at the same time ensuring that the underlying algorithms are able to exploit emerging super-computing architectures.
(Contact: Dr. Paul Gibbon, *p.gibbon@fz-juelich.de*)

CECAM Workshop on Computational Biomolecular Spectroscopy

From 15 to 17 October 2013, JSC will host the CECAM workshop on Frontiers of Computational Biomolecular Spectroscopy and Mass Spectrometry. This workshop is co-organized by the Jülich and Pisa CECAM nodes and aims to bridge the gap between quantum biology and the life sciences. Leading international experts will come together to discuss modern trends and challenges in biomolecular simulations, complemented by experts from experiment employing advanced spectroscopic techniques. The workshop is still open for registrations. Further information can be found at *http://www.cecam.org/workshop-857.html*.
(Contact: Dr. G. Sutmann, *g.sutmann@fz-juelich.de*)

EMI Project Successfully Completed

The European Middleware Initiative (EMI) – a 36-month EU project – was successfully completed in June 2013 with the best possible review grade of 'excellent'. In this project, JSC collaborated with 25 other partners in 18 countries including, among others, CERN, CINECA, University of Warsaw, DESY, University of Dresden, INFN, University of Lund, University of Copenhagen, and the UK Science & Technology Facilities Council.

As a flagship EU Grid computing project for middleware development, harmonization, and maintenance, it contributed to the seamless access of computing resources ranging from small PC clusters up to the largest supercomputers in infrastructures such as EGI or PRACE in Europe as well as OSG and XSEDE in the USA.

The EMI services for computing, security, information management, and data management have been fundamental for the operation of Grid computing within Europe for scientific communities such as the Worldwide Large Hadron Collider Computing Grid (WLCG). The success of Grid computing was highlighted by Prof. Rolf-Dieter Heuer, Director-General of CERN, in the context of the discovery of the Higgs boson: "It has only been possible because of the extraordinary performance of the accelerators, including the infrastructure, the experiments, and the Grid computing."

JSC staff members made significant contributions with their technical expertise in EMI, including essential parts of the UNICORE technology in collaboration with other UNICORE partners. JSC also had a number of key roles such as strategic project leadership including standardization, as well as heading the support activities. More information:

http://www.eu-emi.eu/; Youtube video on EMI and Higgs boson: *http://www.youtube.com/watch?v=11x1mMHRuKU*.
(Contact: Prof. Dr. Morris Riedel, *m.riedel@fz-juelich.de*)

COPA-GT Workshop on HPC

The COPA-GT Workshop on HPC was held from 11 to 12 July at JSC as part of the EU Initial Training Network "Coupled Parallel Simulation of Gas Turbines" (COPA-GT), providing training in high-performance computing for young researchers from the fields of propulsion and electric power generation systems. The COPA-GT network has 10 participating member organizations and is coordinated by the Centre Européen de Recherche et de Formation Avancée en Calcul Scientifique (CERFACS), see *http://copagt.cerfacs.fr/*.

The goal of the workshop was to achieve higher performance of the flow solvers used within the COPA-GT network. Although the participants had only limited prior experience with the BG/Q architecture, with the help of JSC staff members all the codes (ALYA, DELTA, Moose, OpenFOAM and ZFS) were successfully ported to JUQUEEN, and the majority of them were scaled up to two racks (32,000 cores). The tuned codes will help to improve the modelling of gas turbines, paving the way for cleaner combustion process and lower CO_2 emissions, one of the central scientific aims of COPA-GT.
(Contact: Dr. Mike Nicolai, *mi.nicolai@fz-juelich.de*)

MATSE Exams Passed

At the end of August 2013, 26 MATSE trainees (mathematical technical software developers) supervised by the JSC education team passed their final examinations. During a ceremony on 30 August 2013, they were warmly congratulated by Karsten Beneke, vice-chairman of the board of directors of Forschungszentrum Jülich, Heinz Gehlen, managing director of the Chamber of Commerce Aachen (IHK), and Prof. Volker Sander, Aachen University of Applied Sciences (FH Aachen). More than 65 percent of the trainees achieved an overall grade of at least "good"; a grade of "excellent" was achieved by Jennifer Groß (IEK-3). She scored 92 percent, which was the highest score of all the 125 examinees in the district of Aachen and was only equalled by one other student.
(Contact: Prof. Paul Jansen, *p.jansen@fz-juelich.de*)

Events

HBP Workshop on Interactive Supercomputing - IASC 2013

Date: 30 September - 1 October 2013
Venue: Steigenberger Airport Hotel, Frankfurt (M)
Info: *http://www.fz-juelich.de/ias/jsc/events/iasc13*

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