

Energy-oriented Centre of Excellence EoCoE Launched

At the Maison de la Simulation in the Parisian suburb of Saclay, around 90 delegates of the recently approved H2020 Energy-Oriented Centre of Excellence for computing applications, (EoCoE, pronounced echo) gathered for an inaugural meeting from 5-6 October 2015. The consortium is structured around a central Franco-German hub coordinating a pan-European network of 8 countries and 23 teams. Its partners are strongly engaged in both the HPC and the respective energy fields, sharing a vision of creating a sustainable community around computational energy science. The initial goal of this 3-year project is to harness the maturing supercomputing infrastructure available within the EU to foster and accelerate the transition to a reliable, carbon-neutral energy supply.

EoCoE will achieve this through targeted support of heavily utilised modelling applications specific to four elemental pillars: Meteorology (air), Materials (earth), Hydrology (water) and Fusion (fire). Pressing scientific and technical challenges within these domains will be addressed and resolved with the help of a 'fifth element'; a multidisciplinary transversal basis supplying high-end expertise in applied mathematics and HPC. At the kick-off meeting, the first steps towards achieving this goal were made via a series of 'speed-dating' sessions between the domain-pillar modellers and the HPC/mathematical experts.

These served to establish explicit partnerships on joint code development which will be further consolidated in a series of benchmarking and optimisation workshops starting this December.

(Contact: Prof. Paul Gibbon, p.gibbon@fz-juelich.de)

Preparatory Access to Computing and Support Resources

JSC is offering a new way of accessing its computing and support resources. Besides submitting a full project proposal via the regular NIC/GCS and JARA-HPC/VSR calls, users may now apply for Preparatory Access, which includes a limited amount of computing time on JURECA or JUQUEEN for porting and testing purposes as well as support by the JSC Simulation Labs.

Analogously to similar schemes previously introduced within PRACE, the JSC Preparatory Access aims to facilitate access to the Jülich supercomputers for researchers with computationally intensive scientific problems, but codes that still need to be made fit for HPC prior to a full proposal. Applications for Preparatory Access to JSC resources may be submitted twice a year before the start of the computing time periods on 1 November and 1 May, respectively. Applications will undergo a technical evaluation by JSC staff, who will assess the potential of the codes to benefit from HPC adaptation and tuning. If approved, users receive a limited computing time budget along with expert assistance from one of the JSC Simulation Labs for a period of

up to four months, to improve the performance of their application and prepare a full project proposal.

Further details on the new JSC Preparatory Access scheme can be found at <http://www.fz-juelich.de/ias/jsc/prep-access>. The deadline for applications for the next computing time period is 30 October 2015.

(Contact: Prof. Paul Gibbon, simlab@fz-juelich.de)

IBM, JSC and NVIDIA inaugurated the POWER Acceleration and Design Center

The POWER Acceleration and Design Center (PADC) is a new joint undertaking between JSC as well as IBM and NVIDIA. The centre will work together with scientists to enable their applications for future supercomputing architectures on the path towards exascale computing. So far, JSC offered scientists the opportunity to exploit the performance of several generations of Blue Gene to address challenges that required scalable compute resources for solving complex numerical problems. To reach the next performance levels, significant architectural changes are ahead of us. The PADC has linked itself to OpenPOWER, a new vendor-driven collaboration that includes vendors that are working promising technologies and architectures, which may be used for future supercomputers at JSC.

The two-day workshop to open the centre attracted more than 50 attendees to listen to almost 20 speakers, who presented their technologies, applications and early results using OpenPOWER technologies. IBM's vice-presidents Dave Turek and Alessandro Curioni outlined the ongoing transformations towards future HPC architectures and new HPC use cases involving data-intensive applications. NVIDIA's vice-presidents Scott Baker and Marc Hamilton seconded this focussing on the role of GPUs as enabling technology and its application to Deep Learning. Application developers from different research areas, ranging from plasma and condensed matter physics to climate and brain research, gave an impression of their current and future challenges. The presentations on programming models and performance analysis tools showed that these are ready and making further progress to enable these applications for future architectures, e.g. those based on OpenPOWER technologies. For more information see

<http://www.fz-juelich.de/ias/jsc/padc>.

(Contact: Prof. Dirk Pleiter, d.pleiter@fz-juelich.de)

JSC @ SC'15

SC15, the premier international exhibition and conference on high-performance computing, networking, storage, and analysis, will take place in Austin, Texas, USA, from 15 to 20 November 2015, where JSC will present its supercomputing activities at booth #233. JSC staff will demonstrate scien-

tific simulations on supercomputers and the supercomputing tools LLview, Scalasca, SIONlib, and UNICORE, all developed in-house. JSC's activities in current European supercomputing activities will also be showcased, particularly its involvement in the Human Brain Project. The HPC section of the Jülich Aachen Research Alliance (JARA-HPC) is a guest at JSC's booth and will present its projects on visualizing complex data, in particular of neural networks and brain regions.

JSC staff will also be on hand continuously at the joint booth of the European Exascale Projects (#917) and at the PRACE booth (#247). As part of the conference programme, JSC staff will give a tutorial on "Practical Hybrid Parallel Application Performance Engineering", present talks, and participate in numerous special interest group sessions. Detailed information on JSC's participation can be found at <http://www.fz-juelich.de/ias/jsc/events/sc15>.

(Contact: Dr. Florian Janetzko, f.janetzko@fz-juelich.de)

Events

Workshop Supercomputing for Neuroscientists

Date: 3 November 2015, 09:00-17:00

Venue: Jülich Supercomputing Centre, Rotunda

Registration: <http://www.fz-juelich.de/ias/jsc/scn>

Data analysis and data mining with Python

Instructors: Dr. Jan Meinke, Dr. Olav Zimmermann, JSC

Date: 9-11 November 2015, 09:00-16:30

Venue: Jülich Supercomputing Centre, Ausbildungsraum 1

Registration: j.meinke@fz-juelich.de

Introduction to the programming and usage of the supercomputing resources at Jülich

Instructors: Representatives of IBM, Intel and ParTec, JSC staff members

Date: 26-27 November 2015, starting at 13:00 on 26 Nov.

Venue: Jülich Supercomputing Centre, Hörsaal

Registration: jsc-conferences@fz-juelich.de

Advanced Parallel Programming with MPI and OpenMP

Instructor: Dr. Rolf Rabenseifner, HLRS Stuttgart

Date: 30 November - 1 December 2015, 09:00-16:30

Venue: Jülich Supercomputing Centre, Ausbildungsraum 1

Registration: http://java.hlrs.de/ParProgWS_Registration/

Introduction to OpenGL

Instructor: Dr. Herwig Zilken, JSC

Date: 8 December 2015, 13.30-16:30

Venue: Jülich Supercomputing Centre, Meeting room 1

Registration: h.zilken@fz-juelich.de

If you would like to receive regular information on our events, please send an email to jsc-events-join@fz-juelich.de.

Further events, talks, and training courses:

<http://www.fz-juelich.de/ias/jsc/events>