

## **Training course with hands-on sessions**

**Topic:**           **Efficient Parallel Programming with GASPI**

**Instructors:**   Dr. Christian Simmendinger, T-Systems Solutions for Research GmbH,  
Dr. Mirko Rahn and Dr. Daniel Gruenewald, Fraunhofer ITWM

**Contents:**       In this tutorial we present an asynchronous dataflow programming model for Partitioned Global Address Spaces (PGAS) as an alternative to the programming model of MPI. GASPI, which stands for Global Address Space Programming Interface, is a partitioned global address space (PGAS) API. The GASPI API is designed as a C/C++/Fortran library and focused on three key objectives: scalability, flexibility and fault tolerance. In order to achieve its much improved scaling behaviour GASPI aims at asynchronous dataflow with remote completion, rather than bulk-synchronous message exchanges. GASPI follows a single/multiple program multiple data (SPMD/MPMD) approach and offers a small, yet powerful API (see also <http://www.gaspi.de> and <http://www.gpi-site.com>). GASPI is successfully used in academic and industrial simulation applications. Hands-on sessions (in C and Fortran) will allow users to immediately test and understand the basic constructs of GASPI. This course provides scientific training in Computational Science, and in addition, the scientific exchange of the participants among themselves.

Agenda:

- 13:15-13:30   Registration
- 13:30-14:15   General introduction to GASPI
- 14:15-14:30   One sided communication in GASPI
- 14:30-14:45   Coffee Break
- 14:45-15:00   Memory segments in GASPI
- 15:00-16:30   Data Flow in GASPI
- 16:30-16:45   Collectives and Passive Communication
- 16:45-17:00   Questions and Answers

The course will be given in English.

**Time:**           Monday, 19 May 2014, 13:30-17:00

**Venue:**          Jülich Supercomputing Centre, Ausbildungsraum 2, building 16.3, room 004

**Registration:**   Please register with Rene Halver, Tel. +49 2461 61 6424,  
e-mail: [jsc-gaspi@fz-juelich.de](mailto:jsc-gaspi@fz-juelich.de)

Anyone interested is cordially invited to participate in this event.