

# Courses, Workshops and Conferences 2018, January – June



|     | Course / Workshop Title  | Location  | Course Language | Days | Date               |
|-----|--|-----------|-----------------|------|--------------------|
| dat | Parallel and Scalable Machine Learning ( <b>PRACE course</b> )                     | Jülich    | English         | 3    | Jan 15-17, 2018    |
| par | Introduction to hybrid programming in HPC ( <b>PRACE course</b> )                  | Garching  | English         | 1    | Jan 18, 2018       |
| dat | Deep Learning Workshop   | Garching  | English         | 1    | Jan 22, 2018       |
| par | Programming the new KNL Cluster at LRZ   | Garching  | English         | 2    | Jan 24-25, 2018    |
| par | Parallel Programming with MPI / OpenMP   | Paderborn | English         | 3    | Feb 5-7, 2018      |
| par | Parallel Programming (MPI, OpenMP) and Tools                                       | Dresden   | German *)       | 5    | Feb 12-16, 2018    |
| lng | Programming with Fortran   | Garching  | English         | 3    | Feb 14-16, 2018    |
| dat | Deep Learning Workshop   | Garching  | English         | 1    | Feb 15, 2018       |
| lng | Introduction to Python   | Jülich    | German *)       | 3    | Feb 19-21, 2018    |
| cfp | Introduction to Computational Fluid Dynamics                                       | Siegen    | German          | 5    | Feb 19-23, 2018    |
| c+w | NIC Symposium 2018   | Jülich    | English         | 2    | Feb 22-23, 2018    |
| prf | Intel KNL Many-Core - usage and profiling  | Jülich    | English         | 4    | Feb 26-Mar 1, 2018 |
| lng | Advanced C++ with Focus on Software Engineering                                    | Erlangen  | English         | 3    | Feb 28-Mar 2 2018  |
| cfp | CFD with OpenFOAM®   | Stuttgart | German *)       | 5    | Mar 5-9, 2018      |
| par | OpenMP GPU Directives for Parallel Accel. Supercomp. ( <b>PRACE</b> )              | Stuttgart | English         | 2    | Mar 12-13, 2018    |
| dat | Parallel I/O and Portable Data Formats ( <b>PRACE course</b> )                     | Jülich    | English         | 3    | Mar 12-14, 2018    |
| par | Parallel Programming of High Performance Systems                                   | Erlangen  | English         | 5    | Mar 12-16, 2018    |
| vis | Introduction to ParaView for the visualization of scientific data                  | Jülich    | German *)       | 1    | Mar 15, 2018       |
| par | Introduction to parallel programming with MPI and OpenMP                           | Jülich    | English         | 4    | Mar 19-22, 2018    |
| par | Iterative Linear Solvers and Parallelization                                       | Stuttgart | German          | 5    | Mar 19-23, 2018    |
| lng | Python for Supercomputing  | Garching  | English         | 1    | Mar 23, 2018       |
| par | Advanced Topics in High Performance Computing ( <b>PRACE course</b> )              | Garching  | English         | 4    | Mar 26-29, 2018    |
| dat | Deep Learning Workshop   | Garching  | English         | 1    | Apr 5, 2018        |
| par | Parallelization with MPI and OpenMP  | Mainz     | English         | 4    | Apr 9-12, 2018     |
| lng | Fortran for Scientific Computing ( <b>PRACE course</b> )                           | Stuttgart | English         | 5    | Apr 9-13, 2018     |
| prf | From zero to hero: Understanding and fixing intra-node performance bottlenecks     | Jülich    | English         | 2    | Apr 11-12, 2018    |
| vis | Introduction to Parallel In-Situ Visualization                                     | Jülich    | English         | 1    | Apr 19, 2018       |
| par | GPU Programming with CUDA ( <b>PRACE course</b> )                                  | Jülich    | English         | 3    | Apr 23-25, 2018    |
| prf | Cray XC40 Workshop on Scaling and Node-Level Performance                           | Stuttgart | English         | 4    | Apr 23-26, 2018    |
| prf | VI-HPS Tuning Workshop ( <b>PRACE course</b> )                                     | Garching  | English         | 5    | Apr 23-27, 2018    |
| vis | Scientific Visualization   | Stuttgart | English         | 2    | May 7-8, 2018      |
| par | Introduction to programming with GASPI in HPC                                      | Garching  | English         | 2    | May 8-9, 2018      |
| lng | Advanced C++, Focus on Software Engineering  | Stuttgart | German *)       | 4    | May 14-17, 2018    |
| lng | Programming in C++   | Jülich    | English         | 4    | May 14-17, 2018    |
| par | Introduction to the Programming and Usage of the Supercomputer Resources at Jülich | Jülich    | English         | 2    | May 28-29, 2018    |
| lng | Fortran Modernization Workshop   | Garching  | English         | 2    | Jun 4-5, 2018      |
| cfp | Workshop on ZFS (zonal flow solver)  | Stuttgart | English         | 2    | Jun 5-6, 2018      |
| par | Introduction to hybrid programming in HPC  | Vienna    | English         | 2    | Jun 6-7, 2018      |
| dat | Introduction to Deep Learning Models   | Jülich    | English         | 2    | Jun 6-7, 2018      |
| lng | High-performance scientific computing in C++ ( <b>PRACE course</b> )               | Jülich    | English         | 2    | Jun 11-13, 2018    |
| dat | Deep Learning Workshop   | Garching  | English         | 1    | Jun 12, 2018       |
| lng | Fortran Modernization Workshop   | Stuttgart | English         | 2    | Jun 12-13, 2018    |
| prf | Node-Level Performance Engineering ( <b>PRACE course</b> )                         | Stuttgart | English         | 2    | Jun 14-15, 2018    |
| lng | High-performance Computing with Python ( <b>PRACE course</b> )                     | Jülich    | English         | 2    | Jun 18-19, 2018    |
| par | Introduction to hybrid programming in HPC  | Stuttgart | English         | 1    | Jun 19, 2018       |
| clu | Cluster Workshop   | Stuttgart | German          | 2    | Jun 20-21, 2018    |
| prf | HPC code optimisation workshop ( <b>PRACE course</b> )                             | Garching  | English         | 2    | Jun 21-22, 2018    |

# Courses, Workshops and Conferences 2018, July - December



|     | Course / Workshop Title  | Location  | Course Language | Days | Date                |
|-----|--|-----------|-----------------|------|---------------------|
| par | Concepts of GASPI and Interoperability with other communication APIs ( <b>PRACE course</b> ) | Stuttgart | English         | 2    | Jul 2-3, 2018       |
| par | Introduction to UPC and Co-Array Fortran ( <b>PRACE course</b> )                             | Stuttgart | English         | 2    | Jul 5-6, 2018       |
| Ing | Advanced C++, Focus on Software Engineering  | Stuttgart | German *)       | 4    | Jul 10-13, 2018     |
| par | Intel Manycore Programming Workshop ( <b>PRACE course</b> )                                  | Garching  | English         | 3    | Jul 16-18, 2018     |
| par | Introduction to parallel programming with MPI and OpenMP                                     | Jülich    | English         | 5    | Aug 13-17, 2018     |
| par | Parallel Programming with MPI / OpenMP   | Zürich    | English         | 4    | Aug 20-23, 2018     |
| c+w | EnviroInfo 2018 Conference   | Garching  | English         | 2    | Sep 5-7, 2018       |
| par | Iterative Linear Solvers and Parallelization   | Garching  | German          | 5    | Sep 10-14, 2018     |
| cfD | Introduction to Computational Fluid Dynamics   | Stuttgart | German          | 5    | Sep 10-14, 2018     |
| c+w | 12 <sup>th</sup> International Parallel Tools Workshop                                       | Stuttgart | English         | 2    | Sep 17-18, 2018     |
| Ing | Advanced Fortran Topics ( <b>PRACE course, tbc</b> )   | Garching  | English         | 5    | Sep 17-21, 2018     |
| c+w | Extreme Data Workshop  | Jülich    | English         | 2    | Sep 18-19, 2018     |
| cfD | CFD with OpenFOAM®   | Siegen    | German *)       | 5    | Sep 24-28, 2018     |
| c+w | CECAM tutorial: Atomistic Monte Carlo Simulations of Bio-molecular Systems                   | Jülich    | English         | 5    | Sep 24-28, 2018     |
| dat | Introduction to Cluster Filesystems  | Stuttgart | German          | 1    | Sep 25, 2018        |
| c+w | High Performance Computing in Science and Engineering  | Stuttgart | English         | 2    | Oct 4-5, 2018       |
| Ing | Porting code from Matlab to Python   | Jülich    | English         | 2    | Oct 8-9, 2018       |
| Ing | C Language for Beginners   | Garching  | English         | 3    | Oct 9-11, 2018      |
| par | Parallel Programming Workshop (MPI, OpenMP and advanced topics) ( <b>PRACE course, tbc</b> ) | Stuttgart | English         | 5    | Oct 15-19, 2018     |
| Ing | Advanced C++ with Focus on Software Engineering  | Garching  | English         | 3    | Oct 23-25, 2018     |
| vis | Scientific Visualization   | Stuttgart | English         | 2    | Oct 25-26, 2018     |
| par | Introduction to GPU programming using OpenACC  | Jülich    | English         | 2    | Oct 29-30, 2018     |
| prf | Cray XC40 Workshop on Scaling and Node-Level Performance                                     | Stuttgart | English         | 5    | Nov 5-9, 2018 (tbc) |
| Ing | C++ Language for Beginners   | Garching  | English         | 4    | Nov 6-9, 2018       |
| Ing | Software Development in Science  | Jülich    | English         | 2    | Nov 19-20, 2018     |
| Ing | Advanced C++ with Focus on Software Engineering  | Stuttgart | German *)       | 4    | Nov 19-22, 2018     |
| par | Introduction to the Programming and Usage of the Supercomputer Resources at Jülich           | Jülich    | English         | 2    | Nov 22-23, 2018     |
| par | Advanced Parallel Programming with MPI and OpenMP  | Jülich    | English         | 3    | Nov 26-28, 2018     |
| Ing | Fortran for Scientific Computing   | Stuttgart | German *)       | 5    | Dec 3-7, 2018 (tbc) |
| par | Parallel Programming with HPX ( <b>PRACE course</b> )  | Stuttgart | English         | 2    | (tba)               |

## Legend:

\*) Slides in English

Status May 04, 2018

### Parallel Programming **par**

- Message Passing Interface - MPI
- Hybrid, e.g., MPI+X
- OpenMP Shared Memory Parallelization
- Partitioned Global Address Space (PGAS) Languages, e.g., UPC, Co-Array Fortran, GASPI
- Iterative Solver and Parallelization
- GPUs and Accelerators, e.g., CUDA, OpenACC, OpenMP-4.0, OpenCL
- High performance parallelism, e.g., HPX

### Computational Fluid Dynamics **cfD**

- Introduction to Computational Fluid Dynamics
- CFD with OpenFOAM®

### Scientific Visualization **vis**

- Compute Cluster - Usage and Administration **clu**

### Performance Optimization and Debugging **prf**

- Node-Level Performance Engineering
- Tools courses, e.g. VI-HPS tuning courses
- Workshops on optimization at scale
- System specific optimization courses (Intel MIC, Cray, NEC)

### Data in HPC **dat**

- Cluster Filesystems
- Parallel Input/Output, e.g., with MPI-I/O, HDF, XDF5
- Data analysis, e.g. statistics with R

### Programming Languages for Scientific Computing **Ing**

- Fortran
- Python
- C++
- C

### Training for special communities **com**

- Scientific Conferences and Workshops **c+w**

PRACE courses: GCS is a PRACE Training Centre. Some of the courses are sponsored by the PRACE training programme.

For further information and/or registration please visit our web page/s:

- <http://www.hlr.de/training/>

- <http://www.lrz.de/services/compute/courses/>

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

- <http://www.gauss-centre.eu/training>

- <http://hpc-calendar.gauss-allianz.de/>

- <http://www.training.prace-ri.eu/>