



## Courses, Workshops and Conferences 2017, July - December

	Course / Workshop Title	Location	Course Language	Days	Date
par	Efficient Parallel Programm. with GASPI ( <b>PATC course</b> )	Stuttgart	English	2	Jul 3-4, 2017
dat	Using R at LRZ	Garching	English	1	Jul 4, 2017
par	Introduction to parallel programming with MPI and OpenMP	Jülich	English	4	Aug 15-18, 2017
cfp	CFD with OpenFOAM®	Stuttgart	German *)	5	Aug 28-Sep 1
dat	Deep Learning Workshop	Garching	English	1	Sep 14, 2017
cfp	Introduction to Computational Fluid Dynamics	Stuttgart	German	5	Sep 11-15, 2017
prf	Introduction to the Cray XC40 HPC System at HLRS	Stuttgart	English	1	Sep 19, 2017
prf	Cray XC40 Workshop on Scaling and Node-Level Performance	Stuttgart	English	3	Sep 20-22, 2017
dat	Introduction to Cluster Filesystems	Stuttgart	German	1	Sep 26, 2017
Ing	Advanced C++ with Focus on Software Engineering	Garching	English	3	Oct 4-6, 2017
c+w	High Performance Computing in Science and Engineering	Stuttgart	English	2	Oct 5-6, 2017
Ing	Porting code from Matlab to Python	Jülich	English	2	Oct 9-10, 2017
Ing	Introduction to Python	Jülich	German *)	3	Oct 9-11, 2017
par	Introduction to GPU programming using OpenACC	Jülich	English	2	Oct 16-17, 2017
par	Parallel Programming Workshop (MPI, OpenMP and advanced topics) ( <b>PATC course</b> )	Stuttgart	English	5	Oct 16-20, 2017
Ing	C Language for Beginners	Garching	English	3	Oct 24-26, 2017
vis	Scientific Visualization	Stuttgart	English	2	Nov 6-7, 2017
Ing	C++ Language for Beginners	Garching	English	4	Nov 7-10, 2017
Ing	Software Development in Science	Jülich	English	1	Nov 20, 2017
Ing	Advanced C++, Focus on Software Engineering	Stuttgart	German *)	4	Nov 20-23, 2017
par	Vectorisation and Portable Programming Using OpenCL	Jülich	English	2	Nov 21-22, 2017
par	Introduction to the Programming and Usage of the Supercomputer Resources at Jülich	Jülich	English	2	Nov 23-24, 2017
par	Advanced Parallel Programming with MPI and OpenMP	Jülich	German *)	3	Nov 27-29, 2017
Ing	Fortran for Scientific Computing	Stuttgart	German *)	5	Nov 27 - Dec 1
prf	Node-Level Performance Engineering ( <b>PATC course</b> )	Garching	English	2	Nov 30 - Dec 1
com	Molecular Modeling with Schrödinger-Suite	Garching	English	3	Dec 5-7, 2017

### Legend:

\*) Slides in English Status November 16, 2017

#### Parallel Programming **par**

- Message Passing Interface - MPI
- 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 **cfp**

- 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**

PATC courses: GCS is a PRACE Advanced Training Centre (PATC). Some of the courses are sponsored by the PATC program.

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



## Courses, Workshops and Conferences 2018, January – July

	Course / Workshop Title	Location	Course Language	Days	Date
dat	Parallel and Scalable Machine Learning ( <b>PATC course</b> )	Jülich	English	3	Jan 15-17, 2018
par	Introduction to hybrid programming in HPC ( <b>PATC course</b> )	Garching	English	1	Jan 18, 2018
par	Programming the new KNL Cluster at LRZ	Garching	English	2	Jan 24-25, 2018
prf	Intel KNL Many-Core - usage and profiling	Jülich	English	4	Feb 1, 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
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
cfp	CFD with OpenFOAM®	Stuttgart	German *)	5	Mar 5-9, 2018
par	OpenMP and OpenACC GPU Directives for Parallel Accelerated Supercomputers ( <b>PATC course</b> )	Stuttgart	English	2	Mar 12-13, 2018
dat	Parallel I/O and Portable Data Formats ( <b>PATC 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	Parallel Programming with HPX	Stuttgart	English	2	Mar 15-16, 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
par	Advanced Topics in High Performance Computing ( <b>PATC course</b> )	Garching	English	4	Mar 26-29, 2018
vis	Introduction to Parallel In-Situ Visualization	Jülich	English	1	Apr 1, 2018
vis	Usage of VTK for scientific-technical visualization	Jülich	German	½	Apr, 2018 (tba)
par	Parallelization with MPI and OpenMP	Mainz	English	4	Apr 9-12, 2018
lng	Fortran for Scientific Computing ( <b>PATC 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
par	GPU Programming with CUDA ( <b>PATC 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>PATC course</b> )	Garching	English	5	Apr 23-27, 2018
vis	Scientific Visualization	Stuttgart	English	2	May 7-8, 2018
lng	Advanced C++, Focus on Software Engineering	Stuttgart	German *)	4	May 14-16, 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
prf	Intel MIC / Knights Landing Programming Workshop ( <b>PATC course</b> )	Garching	English	3	Jun 2018 (tba)
lng	High-performance scientific computing in C++ ( <b>PATC course</b> )	Jülich	English	2	Jun 11-13, 2018
prf	Node-Level Performance Engineering ( <b>PATC course</b> )	Stuttgart	English	2	Jun 14-15, 2018
lng	High-performance Computing with Python ( <b>PATC 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
par	Concepts of GASPI and Interoperability with other communication APIs ( <b>PATC course</b> )	Stuttgart	English	2	Jul 2-3, 2018
par	Introduction to UPC and Co-Array Fortran ( <b>PATC course</b> )	Stuttgart	English	2	Jul 5-6, 2018
dat	Introduction to Cluster Filesystems	Stuttgart	German	1	Jul 2018 (tba)