

# COURSES, WORKSHOPS AND CONFERENCES, January - June 2019

SUPERCOMPUTING AT THE LEADING EDGE

	Course / Workshop Title	Location	Language	Days	Date
cfd	CFD with OpenFOAM®	Garching	English	5	Jan 14-18, 2019
par	Introduction to hybrid programming in HPC (PRACE course)	Garching	English	2	Jan 28-29, 2019
par	Parallel Programming (MPI, OpenMP) and Tools	Dresden	German *)	5	Feb 4-8, 2019
com	ESM user forum	Jülich	English	2	Feb 6-7, 2019
prf	HPC Optimization and Scaling Workshop	Jülich	English	5	Feb 18-22, 2019
cfd	Introduction to Computational Fluid Dynamics	Siegen	German	5	Feb 18-22, 2019
prf	Node-Level Performance Engineering (PRACE course)	Garching	English	2	Feb 20-21, 2019
dat	Parallel and Scalable Machine Learning (PRACE course)	Jülich	English	3	Feb 25-27, 2019
par	Parallel Programming of High Performance Systems	Garching	English	5	Feb 25 - Mar 1
cfd	Workshop - ANSYS Technology day	Garching	German	1	Feb 27, 2019
lng	Programming with Fortran	Garching	English	3	Mar 6-8, 2019
dat	Introduction to Cluster Filesystems	Stuttgart	German	1	Mar 7, 2019
lng	Parallel computing with MATLAB	Garching	English	1	Mar 11, 2019
lng	Introduction to Python	Jülich	German *)	3	Mar 11-13, 2019
cfd	CFD with OpenFOAM®	Stuttgart	German *)	5	Mar 11-15, 2019
vis	Introduction to ParaView for the visualization of scientific data	Jülich	German *)	1	Mar 14, 2019
dat	Fundamentals of Accelerated Computing with OpenACC	Garching	English	1	Mar 14, 2019
dat	Fundamentals of Deep Learning for Multiple Data Types	Garching	English	1	Mar 15, 2019
par	Advanced Topics in High Performance Computing (PRACE course)	Garching	English	4	Mar 18-21, 2019
par	Introduction to parallel programming with MPI and OpenMP	Jülich	English	5	Mar 18-22, 2019
par	Iterative Linear Solvers and Parallelization	Stuttgart	English	5	Mar 25-29, 2019
dat	Deep Learning and GPU programming using OpenACC	Vienna	English	3	Mar 27-29
par	GPU Programming with CUDA (PRACE course)	Jülich	English	3	Apr 1-3, 2019
prf	Cray XC40 Workshop on Scaling and Node-Level Performance	Stuttgart	English	5	Apr 1-5, 2019
lng	Introduction to Semantic Patching of C programs with Coccinelle	Garching	English	1	Apr 4, 2019
vis	Usage of VTK for scientific-technical visualization	Jülich	German	1	Apr 8, 2019
par	Parallelization with MPI and OpenMP	Frankfurt	English	3	Apr 8-10, 2019
cfd	Intro. to ANSYS Fluid Dynamics (CFX, Fluent) on LRZ HPC Systems	Garching	English	5	Apr 8-12, 2019
dat	Intro. to the LRZ Supercomputing & Machine Learning Infrastructure	Garching	English	1	Apr 9, 2019
dat	Interactive High-Performance Computing (PRACE course)	Jülich	English	2	Apr 9-10, 2019
dat	Using R at LRZ	Garching	English	1	Apr 10, 2019
dat	Intel Artificial Intelligence Workshop	Garching	English	1	Apr 11, 2019
lng	Using Python at LRZ	Garching	English	1	Apr 12, 2019
lng	Programming in C++	Jülich	English	4	May 6-9, 2019
lng	Fortran for Scientific Computing (PRACE course)	Stuttgart	English	5	May 6-10, 2019
prf	From zero to hero, Part I: Understanding and fixing on-core performance bottlenecks	Jülich	English	2	May 14-15, 2019
lng	Advanced C++ with Focus on Software Engineering	Stuttgart	German *)	4	May 14-17, 2019
vis	Scientific Visualization	Stuttgart	English	2	May 20-21, 2019
par	Intro. to Programming and Usage of Supercomputer Resources at Jülich	Jülich	English	2	May 20-21, 2019
par	HPC code optimisation workshop (PRACE course)	Garching	English	3	May 20-22, 2019
par	Introduction to Intel FPGA Programming Models	Garching	English	1	May 21, 2019
dat	Introduction to Deep Learning Models	Jülich	English	3	May 21-23, 2019
par	OpenMP GPU Directives for Parallel Accel. Supercomp. (PRACE c.)	Stuttgart	English	2	May 22-23, 2019
par	Introduction to Intel FPGA Programming Models	Jülich	English	1	May 23, 2019
lng	High-performance scientific computing in C++ (PRACE course)	Jülich	English	3	May 27-29, 2019
c+w	ESM Symposium	Jülich	English	3	May 27-29, 2019
dat	Deep Learning and GPU programming workshop (PRACE course)	Garching	English	4	Jun 3-6, 2019
par	Introduction to hybrid programming in HPC	Vienna	English	2	Jun 12-13, 2019
lng	Advanced C++ with Focus on Software Engineering	Garching	English	3	Jun 12-14, 2019
lng	High-performance computing with Python (PRACE course)	Jülich	English	3	Jun 17-19, 2019
prf	VI-HPS Tuning Workshop (PRACE course)	Jülich	English	5	Jun 24-28, 2019
clu	Cluster Workshop	Stuttgart	German	2	Jun 25-26, 2019
prf	Node-Level Performance Engineering (PRACE course)	Stuttgart	English	2	Jun 27-28, 2019

	Course / Workshop Title	Location	Language	Days	Date
par	Efficient Parallel Programming with GASPI ( <b>PRACE course</b> )	Stuttgart	English	2	Jul 1-2, 2019
par	Parallel Programming with HPX ( <b>PRACE course</b> )	Stuttgart	English	2	Jul 4-5, 2019
Ing	Advanced C++ with Focus on Software Engineering	Stuttgart	German *)	4	Jul 9-12, 2019
dat	Deep Learning and GPU programming using OpenACC	Stuttgart	English	3	Jul 15-17, 2019
prf	HPE Porting Workshop (tbc)	Stuttgart	English	5	Jul 22-26, 2019 (tbc)
par	Introduction to parallel programming with MPI and OpenMP	Jülich	English	5	Aug 12-16, 2019
par	Parallel Programming with MPI / OpenMP	Zürich	English	4	Aug 19-22, 2019
c+w	13 <sup>th</sup> International Parallel Tools Workshop	Dresden	English	2	Sep 2-3, 2019
cfD	Intro. to ANSYS Fluid Dynamics (CFX, Fluent) on LRZ HPC Systems	Garching	English	5	Sep 2-6, 2019
cfD	CFD with OpenFOAM®	Siegen	German *)	5	Sep 2-6, 2019
Ing	Advanced Fortran Topics ( <b>PRACE course, tbc</b> )	Garching	English	5	Sep 9-13, 2019
cfD	Introduction to Computational Fluid Dynamics	Stuttgart	German	5	Sep 9-13, 2019
par	Iterative Linear Solvers and Parallelization	Garching	German	5	Sep 16-20, 2019
c+w	High Performance Computing in Science and Engineering	Stuttgart	English	2	Oct 7-8, 2019
Ing	Porting code from Matlab to Python	Jülich	English	2	Oct 7-8, 2019
Ing	Introduction to Python	Jülich	German *)	3	Oct 7-9, 2019
Ing	Introduction to Semantic Patching of C programs with Coccinelle	Garching	English	1	Oct 8, 2019
par	Parallel Programming Workshop (MPI, OpenMP and advanced topics) ( <b>PRACE course, tbc</b> )	Stuttgart	English	5	Oct 14-18, 2019
vis	Scientific Visualization	Stuttgart	English	2	Oct 24-25, 2019
par	Introduction to GPU programming using OpenACC	Jülich	English	2	Oct 28-29, 2019
prf	Workshop on Scaling and Node-Level Performance	Stuttgart	English	5	Nov 4-8, 2019 (tbc)
prf	From zero to hero, Part II: Understanding and fixing intra-node performance bottlenecks	Jülich	English	2	Nov 5-6, 2019
dat	Data Science with Python for Computational Biology	Jülich	English	3	Nov 6-8, 2019 (tba)
Ing	Software Development in Science	Jülich	English	2	Nov 19-20, 2019
Ing	Advanced C++ with Focus on Software Engineering	Garching	English	3	Nov 20-22, 2019
Ing	C++ Language for Beginners	Garching	English	4+1	Nov 25-29, 2019
Ing	Advanced C++ with Focus on Software Engineering	Stuttgart	German *)	4	Nov 26-29, 2019
par	Intro. to Progr. and Usage of Supercomputer Resources at Jülich	Jülich	English	2	Nov 28-29, 2019
Ing	Introduction to C	Jülich	German *)	7	Dec 2019 (tba)
par	Advanced Parallel Programming with MPI and OpenMP	Jülich	English	3	Dec 2-4, 2019
Ing	Fortran for Scientific Computing	Stuttgart	German *)	5	Dec 9-13, 2019
par	Introduction to hybrid programming in HPC	Stuttgart	English	1	Dec 2019/Jan 2020 (tbc)

Legend:

\*) Slides in English

**Parallel Programming par**

- Message Passing Interface - MPI
- OpenMP Shared Memory Parallelization
- Partitioned Global Address Space (PGAS) Languages, e.g.,
- 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**

**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
- Optimization and scaling courses and workshops

**Data in HPC dat**

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

**Programming Languages for Scientific Computing Ing**

**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/>