

HiPerCH 4

All presentations will be **in English**.

This workshop is targeted at Hessian students and scientists with interest in programming modern HPC hardware.

You can book each course by itself.

Registration: Please register on our webpage. URL: <http://www.hpc-hessen.de/en/hpc-hessen/worshops-and-events/>

Attendance fee: There is an attendance fee that depends on the different courses. This fee includes lunch and coffee breaks as well as the evening events.

Bachelor and Master students receive a 50% discount. After your registration you will receive a bill for this workshop in early September. Please pay by September 15, 2015:

Sparkasse Darmstadt
(BLZ: 508 501 50; Kto.-Nr. 704 300)
IBAN: DE 36 5085 0150 0000 7043 00,
BIC: HELADEF1DAS
Reason for payment: SC 582 00346,
HiPerCH 4 / FASTEST, "your name", "your university"

For further information, please visit our webpage. URL: <http://www.hpc-hessen.de>

Contact:
Hessisches Kompetenzzentrum für
Hochleistungsrechnen
Mornewegstraße 30
64293 Darmstadt
Email: veranstaltungen@hpc-hessen.de

Location:
HiPerCH 4
TU Darmstadt - Lichtwiese
Hörsaal- und Medienzentrum (HMZ)
Franziska-Braun-Straße 10
L4|02 Room 340
64287 Darmstadt

FASTEST-3D User Meeting
TU Darmstadt - Lichtwiese
Jovanka-Bontschits-Straße 2
L1|08 Room 24
64287 Darmstadt

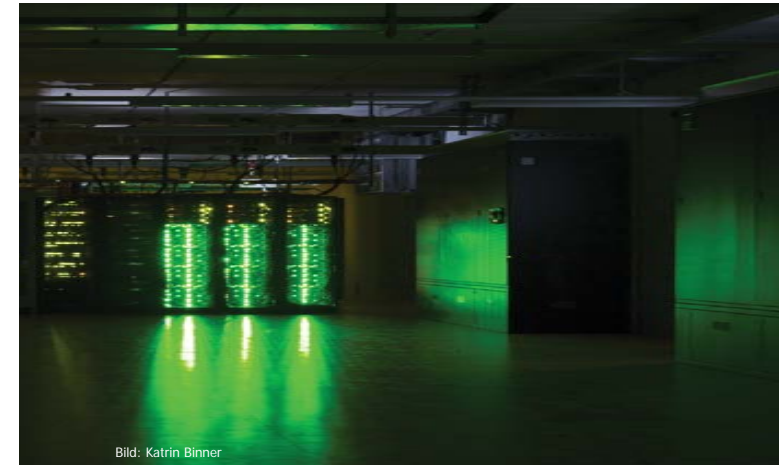
Directions to TU Darmstadt Lichtwiese

Travel by public transport:

At Darmstadt's main train station (Darmstadt Hauptbahnhof) stop long-distance trains as well as regional and interurban trains, buses, and street cars. From the railway station take Bus "K" in direction "Lichtwiese" (terminal stop). You can also use the train Odenwaldbahn RE 65 (train 65) to "TU Lichtwiese", which has a direct connection from Frankfurt main train station to Darmstadt.

Travel by car:

Leave autobahn A5 (Frankfurt/M – Heidelberg, Basel), or A67 (Köln, Wiesbaden – Mannheim) at the exit "Darmstädter Kreuz", direction to "DA-Stadtmitte", and follow the traffic signs to "TUD-Lichtwiese" in the eastern direction towards Aschaffenburg and "Vivarium". The university area "Lichtwiese" is situated on the eastern outskirts of the city. Please note that parking costs 2,50 € per day; the vending machines accept only coins!



HiPerCH 4

High Performance Computing Hessen

**Introduction to High
Performance Computing**
September 28 - October 01, 2015
Darmstadt

FASTEST-3D User Meeting
October 08 - 09, 2015
Darmstadt

Agenda

Monday, Sept. 28

L4|02 Room 340

REGISTRATION

10:00 A.M. - 10:15 A.M.

COURSE

10:15 A.M. - 6:00 P.M.

Introduction to General Purpose Computation on Graphics Processing Units (GPGPUs).

MATTHIAS KRETZ (GSI)

PREREQUISITES:

Participants must have basic knowledge of UNIX/Linux (login with secure shell, shell commands, C++ programming, vi or emacs editors).

For the tutorials all participants are kindly asked to use their own laptop (WLAN).

This course consists of lectures supplemented with practical exercises in OpenCL programming.

- Overview of GPUs: Introduction to GPU structure and concept, trade-off parallel vs. serial, memory bandwidth
- Data parallel computing: Programming models: SIMD vs SIMT, Threads (SIMT), SIMD-loops, vector data types, OpenCL

ATTENDANCE FEE: 15 EURO

Tuesday, Sept. 29

L4|02 Room 340

REGISTRATION

10:00 A.M. - 10:15 A.M.

COURSE

10:15 A.M. - 5:00 P.M.

EVENING EVENT

7:00 P.M.

Introduction to Parallel High Performance Computing

JAN EITZINGER, GERHARD WELLEIN (RRZE)

PREREQUISITES:

Participants must have basic knowledge of UNIX/Linux (login with secure shell, shell commands, basic programming, vi or emacs editors) and in programming with Fortran or C.

For the tutorials all participants are kindly asked to use their own laptop (WLAN).

This course consists of lectures supplemented with practical exercises.

- Introduction to node-level computer architectures
- Short introduction to shared memory parallel programming with OpenMP
- Advanced topics OpenMP programming
- Performance limiting issues on multicore compute nodes
- Introduction to the roofline performance model
- Case studies: Stencil codes, SpMvM

ATTENDANCE FEE: 30 EURO
INCL. EVENING EVENT

Wednesday, Sept. 30

L4|02 Room 340

COURSE

9:00 A.M. - 4:00 P.M.

Thursday, Oct. 01

L4|02 Room 340

COURSE

10:00 A.M. - 1:00 P.M.

The Hessian Infrastructure for HPC

STAFF MEMBERS HPC HESSEN

Overview of available Hardware:

- Hessian and German HPC-facilities
- LOEWE-CSC cluster
- Lichtenberg cluster
- HPC Hessen – Brainware for Science

NO ATTENDANCE FEE

FASTEST-3D User Meeting

Thursday, Oct. 08

L1|08 Room 24

MEETING

11:00 A.M. - 6:00 P.M.

EVENING EVENT

7:30 P.M.

Friday, Oct. 09

L1|08 Room 24

MEETING

9:00 A.M. - 4:00 P.M.

This meeting is mainly intended for the users and developers of the flow solver FASTEST. The participants are kindly invited to give a short presentation of their experience with FASTEST. This includes research results as well as planned projects and difficulties in the use of FASTEST.

Please register as soon as possible. Details of the program will be announced in terms of number of participants (September 07).

ATTENDANCE FEE: 40 EURO
INCL. EVENING EVENT