HiPerCH 10 TU Darmstadt



Location:

Darmstadt

Module 1a and 5 take place at: TU Darmstadt, Lichtwiese Franziska-Braun-Straße 10, Hörsaal - und Medienzentrum (HZM) L4|02 301

Module 1b and 2b take place at: TU Darmstadt, Lichtwiese Jovanka-Bontschits-Straße 7, Gerhard Pahl-Zentrum (Lehrzentrum Maschinenbau), L1|10 PC Pool 206

Module 1c, 3 and 4 take place at: TU Darmstadt, Lichtwiese Jovanka-Bontschits-Straße 7, Gerhard Pahl-Zentrum (Lehrzentrum Maschinenbau), L1|10 PC Pool 108

Frankfurt

Attention: Module 2a: Pre-course Python Basics will take place in Frankfurt Frankfurt Goethe-University, Uni Campus Riedberg, Max-von-Laue-Straße 9 Room: Max-von-Laue-Straße 1, Room 01.120, Physics Building



HiPerCH 10

High Performance Computing Hessen

Introduction to High Performance Computing September 10-14, 2018 Darmstadt



HiPerCH 10

All presentations will be in held English.

This workshop is targeted at students and scientists from Hessen, Mainz, and Kaiserslautern with interest in programming modern HPC hardware. You can book each module separately.

Registration: Please register on our webpage. https://www.hkhlr.de/en/events/hiperch-10-2018-09-10

Attendance fee: There is an attendance fee per module, please refer registration sheet for details. This fee includes lunch and coffee breaks as well as the evening event. Bachelor and Master students (certificate of study is necessary) receive a 50% discount. After your registration you will receive a bill for this workshop in early September. Please pay only after you have received the bill.

Sparkasse Darmstadt IBAN: DE 36 5085 0150 0000 7043 00, BIC: HELADEF1DAS Reason for payment: SC 582 00346, HiPerCH 10, "your name", "your invoice number"



For further information, please visit our webpage. URL: http://www.hkhlr.de





Frankfurt,

Uni Campus Riedberg	ni Campus Riedberg				Module 2a, Sept. 3-4	
Location Monda	y, Sept. 10 Tuesd	ay Sept. 11 We	dnesday, Sept. 12	Thursday, Sept. 13	Friday, Sept. 14	
Darmstadt, Lichtwiese						
L4 02 301 Module	e 1a				Module 5	
L1 10 PC Pool 206 Module	e 2b		Module 1b			
L1 10 PC Pool 108 Module	e 3			Module 4	Module 1c	
Module 1a: Overview of Performance Analysis and Improvement Lecture and talks Date: September 10, Lectures: 10:00-16:00 Talks: 16:00-18:00 Location: Darmstadt, L4 02 Room 301 Topics: • Introduction to the fundamen- tals of serial and parallel perfor- mance, performance analysis, and tools for analyzing. • Overview about concepts for performance improvements Talks: • Talk about Algorithmic Diffe- rentiation (AD) • Special talk for researchers and administrators: "Quality-of-Ser- vice for the Lustre file-system"	Module 1b: Performance Analysis ToolsLectures and hands on sessionDate: September 11-12, 09:00-18:00Sept. 13, 09:00-15:00Location: Darmstadt, L1 10 PC Pool 206Topics: • Experts present tools for performance analysis • hands on sessionsTools: ScoreP, ExtraP, Scalsca, HPC Toolkit, Vampir. Participants must prepare test cases in advance of the workshop. Guidelines will be available two weeks before the workshopTarget group: Users with source code access (FORTRAN, C, C++)For module 1b the participati- on at module 1a is mandatory!	Module 1c: Vectorization of C++ codes using SIMD types Lectures and hands on session Date: September 14, 09:00-16:00 Location: Darmstadt, L1 10 PC Pool 108 Topics: • SIMD & data parallelism intro- duction • algorithm vectorization • vectorizing data structures • ISO C++ direction wrt. SIMD Target group: Developers and architects of HPC codes Knowledge of C++ is necessary Module 2a: Pre-course Python Basics Lectures and hands on sessions Date: Sept. 3-4, 10:00-17:00 Location: Frankfurt, Uni Cam- pus Riedberg,	Topics: Python Basics Target group: Python beginners with experience in another pro- gramming method/language Attention: This course is one week prior to other HiPerCH modules! Participants of module 2b will be preferred. Module 2b: Scientific Python Lectures and hands on session Date: September 10, 10:00-18:00 Location: Darmstadt, L1/10 PC Pool 206 Topics: • Introduction to the SciPy stack: working with numerical data in Py- thon (NumPy), plotting (Matplotlib), high level scientific programming (SciPy) Target group: Interested persons with basic knowledge of Python is necessary to follow the course	Module 3: Software Tools for Unix/Linux Systems Lectures and hands on session Date: Sep. 10-12, 09:00-18:00 Location: Darmstadt, L1 10 PC Pool 108 Topics: • Introduction to Unix, i.e.: Shell, bash basics, regular expressions, editor VIM, shell scripting, sed, awk, compiler Target Group: Scientists using Linux: Beginners and Advanced Module 4: Debugging with TotalView Lectures and hands on session Date: Sep. 13, 09:00-18:00 Location: Darmstadt, L1 10 PC Pool 108 Target group: People working on source codes.	Module 5: HPC in Darmstadt Talks and discussion Date: September 14, 09:00-13:00 Location: Darmstadt, L4 02 Room 301 Topics: • The Darmstadt Lichtenberg High Performance Cluster with its hardware, usabilty, access, and application procedure • Outlook on Lichtenberg 2 • Enough time for questions and discussions is reserved Target group: Scientists from TU Darmstadt, or users of Lichten- berg Cluster Registration and Catering L4 02 Room 304	
Evening event Darmstadt, Sep. 10, 19:00 incl. Module 1a-c. 2b. 3.4.5		Room: Max-von-Laue-Straße 1, Room 01.120, Physics Building	(Basic knowledge of Fortran or C and C++ is necessary	September 06, 2018	