
INTERNATIONAL SPRING SCHOOL ON HIGH PERFORMANCE COMPUTING

HighPer 2018

San Sebastián / Donostia, Spain

April 23-27, 2018

Organized by:

Materials Physics Center (CSIC-UPV/EHU),
Donostia International Physics Center (DIPC),
and
Rovira i Virgili University

<http://grammars.grlmc.com/HighPer2018/>

--- Early registration deadline: March 30, 2018 ---

SCOPE:

HighPer 2018 will be a research training event with a global scope aiming at updating participants about the most recent advances in the critical and fast developing area of high performance computing, which covers a large spectrum of current exciting research and industrial innovation with an extraordinary potential for a huge impact on scientific discoveries, medicine, engineering, business models, and society itself. Renowned academics and industry pioneers will lecture and share their views with the audience.

Most subareas of high performance computing will be displayed, from foundations, infrastructure and management to applications. Major challenges in the field will be identified through 1 keynote lecture, 19 five-hour and fifteen-minute courses, and 1 round table, which will tackle the most active and promising topics. The organizers are convinced that outstanding speakers will attract the brightest and most motivated students. Interaction will be a main component of the event.

An open session will give participants the opportunity to present their own work in progress in 5 minutes. Moreover, there will be two special sessions with industrial and recruitment profiles.

ADDRESSED TO:

Master students, PhD students, postdocs, and industry practitioners will be typical profiles of participants. However, there are no formal pre-requisites for attendance in terms of academic degrees. Since there will be a variety of levels, specific knowledge background may be assumed for some of the courses. Overall, HighPer 2018 is addressed to students, researchers and practitioners who want to keep themselves updated about recent developments and future trends. All will surely find it fruitful to listen and discuss with major researchers, industry leaders and innovators.

STRUCTURE:

3 courses will run in parallel during the whole event. Participants will be able to freely choose the courses they wish to attend as well as to move from one to another.

VENUE:

HighPer 2018 will take place in San Sebastián, a famous touristic coastal city in the Basque Country which was European Capital of Culture 2016. The venue will be:

Centro Ignacio María Barriola
Universidad del País Vasco / Euskal Herriko Unibertsitatea
Campus de Gipuzkoa
Plaza Elhuyar, 1
20018 San Sebastián / Donostia
Spain

KEYNOTE SPEAKER:

Tony Hey (Rutherford Appleton Laboratory, UK Science and Technology Facilities Council), Big Scientific Data and Data Science

PROFESSORS AND COURSES:

Srinivas Aluru (Georgia Institute of Technology), [intermediate] High Performance Computational Biology

David A. Bader (Georgia Institute of Technology), [introductory/intermediate] Massive-scale Graph Analytics

Ümit V. Çatalyürek (Georgia Institute of Technology), [introductory/intermediate] HPC Graph Analytics

Alan Edelman (Massachusetts Institute of Technology), [introductory] Julia, with an Introduction to Performance and Machine Learning

Richard Fujimoto (Georgia Institute of Technology), [intermediate] Parallel Discrete Event Simulation

Timothy C. Germann (Los Alamos National Laboratory), [intermediate] HPC
Frontiers in Computational Materials Science and Engineering

Lennart Johnsson (University of Houston), [introductory/intermediate] Energy
Efficient Computing

Alfio Lazzaro (University of Zurich), [introductory/intermediate] Code
Performance Optimizations

Andrew Lumsdaine (Pacific Northwest National Laboratory),
[intermediate/advanced] Modern C++ for High-performance Computing

Madhav Marathe (Virginia Polytechnic Institute and State University),
[introductory/advanced] Massively Interacting Bio-social Systems: Pervasive,
Personalized and Precision Analytics

Frank Mueller (North Carolina State University), [introductory/intermediate] How
to Parallelize Your Code: Taking Stencils from OpenMP to MPI, CUDA and
TensorFlow

Adrian Sandu (Virginia Polytechnic Institute and State University),
[introductory/intermediate] Revealing Parallelism: How to Decompose your
Problem into Concurrent Tasks

Vivek Sarkar (Georgia Institute of Technology), [introductory] Fundamentals of
Parallel, Concurrent, and Distributed Programming

Marc Snir (University of Illinois at Urbana-Champaign), [introductory]
Programming Models and Run-times for High-Performance Computing

Josep Torrellas (University of Illinois at Urbana-Champaign),
[intermediate/advanced] Parallel Computer Architecture Concepts

Todd J. Treangen (University of Maryland, College Park), [intermediate]
Metagenomic Assembly and Validation

Elena Vataga (University of Southampton), [introductory] Hands-on Introduction
to HPC for Life Scientists

Uzi Vishkin (University of Maryland, College Park), [introductory/intermediate]
Parallel Algorithmic Thinking and How It Has Been Affecting Architecture

David Walker (Cardiff University), [intermediate] Parallel Programming with
OpenMP, MPI, and CUDA

OPEN SESSION

An open session will collect 5-minute voluntary presentations of work in progress by participants. They should submit a half-page abstract containing title, authors, and summary of the research to david.silva409 (at) yahoo.com by April 16, 2018.

INDUSTRIAL SESSION:

A session will be devoted to 10-minute demonstrations of practical applications of high performance computing in industry. Companies interested in contributing are welcome to submit a 1-page abstract containing the program of the demonstration and the logistics needed. At least one of the people participating in the demonstration should have registered for the event. Expressions of interest have to be submitted to david.silva409 (at) yahoo.com by April 16, 2018.

EMPLOYER SESSION:

Firms searching for personnel well skilled in high performance computing will have a space reserved for one-to-one contacts. At least one of the people in charge of the search should have registered for the event. Expressions of interest have to be submitted to david.silva409 (at) yahoo.com by April 16, 2018.

ORGANIZING COMMITTEE:

Íñigo Aldazabal Mensa (co-chair)
Carlos Martín-Vide (co-chair)
Manuel J. Parra-Royón
Txomin Romero Asturiano (co-chair)
David Silva

REGISTRATION:

It has to be done at

<http://grammars.grlmc.com/HighPer2018/registration.php>

The selection of up to 8 courses requested in the registration template is only tentative and non-binding. For logistic reasons, it will be helpful to have an estimation of the respective demand for each course. During the event, participants will be free to attend the courses they wish.

Since the capacity of the venue is limited, registration requests will be processed on a first come first served basis. The registration period will be closed and the on-line registration facility disabled when the capacity of the venue is exhausted. It is highly recommended to register prior to the event.

FEES:

Fees comprise access to all courses and lunches. There are several early registration deadlines. Fees depend on the registration deadline.

ACCOMMODATION:

Suggestions for accommodation are available on the webpage.

CERTIFICATE:

Participants will be delivered a certificate of attendance indicating the number of hours of lectures.

QUESTIONS AND FURTHER INFORMATION:

david.silva409 (at) yahoo.com

ACKNOWLEDGMENTS:

Centro de Física de Materiales (CSIC-UPV/EHU)
Donostia International Physics Center (DIPC)
Universitat Rovira i Virgili