



The Abdus Salam  
**International Centre  
 for Theoretical Physics**  
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# **Introductory School on Parallel Programming and Parallel Architecture for High-Performance Computing**

**3 - 14 October 2016**  
 (ICTP, Miramare, Trieste, Italy)

The Abdus Salam International Centre for Theoretical Physics (ICTP, Trieste, Italy) is organizing a "**Introductory School on Parallel Programming and Parallel Architecture for High-Performance Computing**", to be held at the ICTP, Trieste, Italy, **from 3rd to 14th October 2016**.

The School has the goal of teaching participating *scientists* about modern computer hardware and programming to provide a foundation for future computational research using High-Performance Computing (HPC). Participants will go through an intensive program with focus on practical skills most relevant to *users* of HPC resources of all sizes. They will learn to improve the efficiency of their research codes and to parallelize them. Lectures on a selection of technical aspects of modern HPC hardware will be mixed with introductions to widely used parallel programming tools and libraries. The hands-on sessions will allow participants to practice on small example problems of general scientific interest. Example topics will cover numerical methods, parallel strategies, as well as data management.

The program is specifically addressing the needs of scientists using, writing, or modifying HPC applications will *not* assume, require, or provide significant IT and HPC resource management skills. It will be mainly based on fundamental HPC-relevant features in widely used scientific software for high-performance computing:

- Computer architectures for HPC and how to optimize for them
- Parallel programming tools (MPI & OpenMP)
- Portable, flexible and parallel I/O (HDF5)
- Profiling, benchmarking and debugging
- High-Performance Libraries for the Solution of Common Math Problems

## **GRANTS**

A limited number of grants are available to support the travel and living expenses of selected participants, with priority given to participants working in a developing country and who are at the early stages of their career.

## **HOW TO APPLY FOR PARTICIPATION:**

**Essential requirements are a strong knowledge of the Linux command line environment, as well as a good knowledge of writing programs in Fortran, C/C++ or both. As it will be conducted in English, participants must have an adequate working knowledge of this language.**

The Online Application Form can be accessed through the School website

<http://indico.ictp.it/event/7659/>

Once in the Website, comprehensive instructions will guide you step-by-step on how to fill out and submit the Application Form.

**Activity Secretariat:** E-mail: [smr2877@ictp.it](mailto:smr2877@ictp.it)  
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ICTP Home Page: <http://www.ictp.it>



## **CO-SPONSORED BY:**

- Edinburgh Parallel Computing Centre, U.K.
- Pittsburgh Supercomputing Center, U.S.A.
- MaX - EU Centre of Excellence for HPC Applications, Italy

## **ORGANIZERS:**

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**Gavin PRINGLE**  
 (EPCC/University of Edinburgh, U.K.)

\* **Also Local Organizer**

**DEADLINE to apply:**  
**15 May 2016**

**School website:**  
<http://indico.ictp.it/event/7659/>

