

# Welcome and Workshop Goals

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CERN/PRACE Workshop

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# Introduction

The growth in computing needs for HEP by HL-LHC will outpace technology evolution improvements, leaving a significant resource gap.

- CERN and the LHC experiments are looking at new techniques and new computing resources

High Performance Computing offers very promising opportunities

- Enormous capacities, accelerated architectures, and unique expertise

Today we discuss PRACE's mission, infrastructure, access, training and support and on HEP experiments' experience and plans for HPC

# Goals

- Learn how PRACE works and how we can interact together
  - Understand mechanisms for resource allocation, scheduling, I/O and data serving , authentication and authorization, and firewalls
  - Understand the interactions of PRACE with other EU HPC initiatives
  - Understand PRACE plans for the next generation of hardware deployments
  - Understand how all of these elements impact the scientific use-cases
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- Understand how HEP software and best exploit HPC resources
  - Present the current experience of the experiments on HPC
  - Discuss what changes on the infrastructure and the workflows could be the most beneficial to efficiently working together

# Agenda and Logistics

- The agenda is very full. Please stay in the allocated time and allow some discussion at the end of each talk
- We have reserved an hour at the end of the day for discussion, though hopefully the meeting can be very interactive
- Lunch is self-organized from 12:15 to 13:30
- Coffee is served in the coffee area outside

10:00	→ 10:10	<b>Welcome and Workshop Goals</b> Speaker: Maria Girona (CERN)	10m
10:10	→ 12:10	<b>Presentations from PRACE</b>  How PRACE works, how to interact together, mechanisms for resource allocation, scheduling in terms of I/O, data serving, authentication and authorization, firewalls, etc.. PRACE versus other EU initiatives. PRACE plans for the next generation of deployments (FPGAs, Apache Pass NVRAM, next generation interconnects, more integrated storage, etc.) and how they may impact use-cases.	
10:10		<b>PRACE in a nutshell</b> Speaker: Serge Bogaerts (PRACE)	15m
10:30		<b>Current PRACE Access Mechanisms</b> Speaker: Florian Berberich (PRACE BoD, Jülich Supercomputing Centre)	15m
10:50		<b>PRACE trainings</b> Speaker: David Vicente (BSC)	15m
11:10		<b>High Level Support Teams for HPC users</b> Speaker: Stéphane Requena (member of PRACE BoD, GENCI)	15m
11:30		<b>PRACE scientific code projects</b> Speaker: Fabio Affinito (CINECA)	15m
11:50		<b>PRACE pilots for Large scientific instruments</b> Speaker: Frederic Suter (PRACE)	15m
12:15	→ 13:30	<b>Lunch break</b>	1h 15m
13:30	→ 15:50	<b>Presentations from CERN</b>	
13:30		<b>The role of HPC: experience and outlook - ALICE perspective</b> Speaker: Costin Grigoras (CERN)	15m
13:50		<b>The role of HPC: experience and outlook - ATLAS perspective</b> Speaker: Andrej Filipcic (Jozef Stefan Institute (SI))	15m
14:10		<b>The role of HPC: experience and outlook - CMS perspective</b> Speaker: Markus Klute (Massachusetts Inst. of Technology (US))	15m
14:30		<b>The role of HPC: experience and outlook - LHCb perspective</b> Speaker: Stefan Roiser (CERN)	15m
14:50		<b>The role of HPC: experience and outlook - perspectives from the COMPASS experiment at the SPS</b> Speaker: Riccardo Longo (Univ. Illinois at Urbana Champaign (US))	10m
15:10		<b>Requirements on HPC from the HEP ML perspective</b> Speaker: Maurizio Pierini (CERN)	15m
15:30		<b>Implementing a common layer for accessing HPC - A perspective from CERN IT</b> Speaker: Tim Bell (CERN)	20m
15:50	→ 16:05	<b>Coffee break</b>	15m
16:05	→ 17:05	<b>Discussion and Next Steps</b>	1h