



The poster features a scenic background of Aix-les-Bains, France, with a lake and mountains. It includes a QR code in the top left, the event title in yellow and red text, the dates '1st - 3rd October', and the location 'Aix-les-Bains France'. A URL is provided below the title. The poster lists the Programme Committee and Local Organising Committee members. At the bottom, there are logos for Aix-les-Bains centre des congrès, ECFA, High Luminosity LHC, ALICE, CMS, LHCb, and CERN.

 **ECFA High Luminosity LHC Experiments Workshop**
Physics and technology challenges
1st – 3rd October
Aix-les-Bains
France

<https://indico.cern.ch/conferenceDisplay.py?confId=252045>

Programme Committee

- P. Allport
- A. Ball
- S. Bertolucci
- P. Campana
- D. Charlton
- D. Contardo
- B. Di Girolamo
- P. Giubellino
- J. Incandela
- P. Jenni
- M. Krammer
- M. Mangano
- S. Myers
- B. Schmidt
- T. Virdee
- H. Wessels

Local Organising Committee

P. Allport, D. Contardo, D. Hudson, E. Potter



Picture Credit: OT Aix-les-Bains / Gilles Lansard

M. Krammer
ECFA Chair

HEPHY, Vienna, Austria

Why ECFA ?

ECFA was founded in 1963 on the initiative of V. Weisskopf (DG CERN) and C.F. Powell (SPC Chairman).

Mandate:

- Sponsor or organize ad hoc symposia and conferences;
- Set up study groups and review groups;
- Visit to CERN members states and review organization and resources, repeated at regular intervals;
- **Monitoring of the ongoing implementation of the European Strategy for Particle Physics;**
- Represents PP community in other organizations.

Why ECFA ?

Restricted ECFA:

Composed of one representative per country, the Director General and the Research Director of CERN, the Scientific Secretary of the Strategy Session of the CERN Council, the DESY Director in charge of high-energy physics and astroparticle physics, and the Director of the INFN Frascati Laboratory.

Acts as the communication channel to each participating country, its physics community and national institutes and authorities (funding agencies).

Why now ?

Update of the European Strategy for Particle Physics adopted 30 May 2013 in a special session of CERN Council at Brussels.

Statement c:

c) The discovery of the Higgs boson is the start of a major programme of work to measure this particle's properties with the highest possible precision for testing the validity of the Standard Model and to search for further new physics at the energy frontier. The LHC is in a unique position to pursue this programme. *Europe's top priority should be the exploitation of the full potential of the LHC, including the high-luminosity upgrade of the machine and detectors with a view to collecting ten times more data than in the initial design, by around 2030. This upgrade programme will also provide further exciting opportunities for the study of flavour physics and the quark-gluon plasma.*

Why now ?

The strategy recommends to go for the full upgrade, i.e. $3ab^{-1}$.
The input from the four experiments (ALICE, ATLAS, CMS and LHCb) have made the case for a target integrated luminosity of $3ab^{-1}$ and convinced the Strategy Group.

This is a big step, but it does not mean the approval of the HL-LHC project !!!!

The present CERN Mid Term Plan approved by CERN Council covers up to 2018 (LS2), but not beyond.

- Need to further elaborate physics capabilities
- Need experiments, machine to demonstrate feasibility, and establish timeline and cost estimates
- Convince funding agencies

The HL-LHC is a major “new” project!

It is the next big challenge for particle physics world-wide → contributions from other regions than Europe are crucial.

This is the first large meeting of the community.

Goals of this Workshop

Help define the upgraded HL-LHC detectors and physics program for many years to come at the LHC. In particular:

- Develop a common approach to the HL-LHC program and to identify synergies and possible common efforts.
- Provide a consistent presentation of physics goals, detector requirements and technology R&Ds, accelerator interfaces, long shutdown constraints, and costing methods.
- Identify areas for further joint HL-LHC workshops.
- Provide a summary report to ECFA.

Workshop Structure

Steering Committee of the workshop (* Chairs):

- ALICE: P. Giubellino (SP), H. Wessels (Deputy SP)
- ATLAS: P. Allport* (Upgrades Coord.), D. Charlton (SP), B. Di Girolamo (Tech. Coord.)
- CMS: A. Ball (Tech. Coord.), D. Contardo* (Upgrades Coord.), J. Incandela (SP)
- LHCb: P. Campana (SP), B. Schmidt (Deputy SP)
- Sergio Bertolucci (CERN Dir. Research), Manfred Krammer (ECFA Chair), Peter Jenni (ATLAS) Michelangelo Mangano (LPCC), Steve Myers (CERN Dir. Accelerators), Jim Virdee (CMS)

Workshop Preparation

Small groups with members of all four experiments have been formed to prepare the session of the workshop in the major areas of the LHC upgrade program:

- Physics goals and performance reach
- Tracking devices and associated electronics and readout
- Calorimetry and associated electronics and readout
- Muon Systems and associated electronics and readout
- Trigger/DAQ/Offline/Computing
- Electronics and read-out systems
- Long Shutdown constraints and radiation and activation effects
- Accelerator and Experiment interface

After the Workshop

- Presentation of the summary of the workshop to Restricted ECFA and Plenary ECFA (Nov. 21/22)
- Inform the Scientific Policy Committee of CERN (Dec. 9)
- Inform the CERN Council (Dec. 13)

I am looking forward to an exciting workshop – in the spirit of the Aachen workshop 1990!

Aachen Workshop 4-9 October 1990

LARGE HADRON COLLIDER
WORKSHOP: proceedings. Edited by
G. Jarlskog and D. Rein. Geneva,
Switzerland, CERN, 1990. 3 volumes.
(CERN-90-10)

