



High Energy
High Intensity
Hadron Beams



APD
Accelerator Physics and
synchrotron Design

CARE-HHH-APD Event BEAM'07

*"Finalizing the Roadmap for the Upgrade of the LHC and GSI
Accelerator Complex"*

CERN, Switzerland, 1-5 October 2007, comprising 4 parts:

**Mini-Workshop on LHC+ Beam Performance,
CERN-GSI Meeting on Collective Effects,
Francesco Ruggiero Memorial Symposium, and
Mini-Workshop on Upgrades of LHC Injector Complex & FAIR.**

The CARE-HHH-APD Event BEAM'07 will be devoted to beam dynamics limitations for the two baseline scenarios of the LHC luminosity upgrade and to critical design choices for the upgrade of the LHC injector complex at CERN and for the FAIR complex at GSI. A memorial symposium in the afternoon of 3 October is dedicated to Francesco Ruggiero and to his numerous contributions to accelerator physics.

Our first goal is to assess potential "show-stoppers" for the two alternative LHC high-luminosity upgrade paths and to compare their respective luminosity performance reach. Topics addressed in pursuit of this goal include the beam-beam interaction in a regime of large Piwinski angle, effects of a few long-range encounters at reduced separation, wire compensation, crab cavities, electron lenses, turnaround time, peak and average luminosities, luminosity leveling, machine protection and advanced collimation schemes.

The second goal of BEAM'07 is to advance the designs of the LHC injector upgrade and of the GSI FAIR project. The discussion on the LHC injector upgrade will address the superconducting proton linac (SPL), the PS2, and the upgraded SPS at CERN. Critical issues of the FAIR design will also be examined.

The first half of the workshop will be mainly allocated to beam dynamics and luminosity performance of the upgraded LHC, while the second half will be devoted to the upgrade of the CERN and GSI accelerator complex. Between the two halves we will commemorate Francesco. Further updated information will be posted on the workshop web site <http://care-hhh.web.cern.ch/BEAM07>.

Walter Scandale

Walter.Scandale@cern.ch

Frank Zimmermann

Frank.Zimmermann@cern.ch