PAUL SCHERRER INSTITUT

PSI

# GFA & SwissFEL Accelerator Seminar

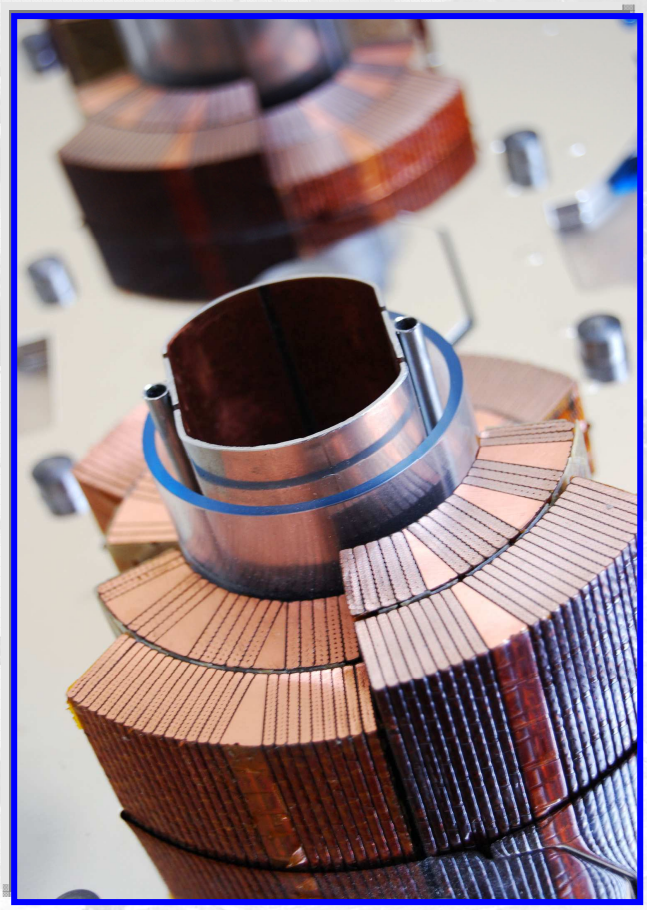
## Plan and Options for LHC Upgrades

**Monday, 3 September 2012, 4 pm, WHGA/001**

**AUDITORIUM**


### Professor Lucio Rossi, CERN


LHC is steadily raising its luminosity performance and reaching the design parameters is expected for 2015. A luminosity upgrade of 5 to 10 times is foreseen after 2020, with new technologies and novel concepts: strong Nb3Sn superconducting magnets in the 12 Tesla range, very compact superconducting crab cavities, new collimator materials, powerful HTS links rated for 150 kA at insulating voltages up to 5kV. The talk will cover these aspects of the luminosity upgrade and will discuss the R&D for assessing the possibility of an energy upgrade enabling the 30 TeV collision energy frontier, on the horizon 2030. Based on a 20 T superconducting magnet, the High Energy LHC will require also new developments for the beam screen and kickers for handling a double rigidity beam in the same narrow space of LHC injection and dump line.



Beam pipe and superconducting magnet coils in the LHC accelerator

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