

Title: Dr.

Lecturer: Bernhard Holzer

Date and Times:

- Wednesday 13th July from 11:15 am to 12:00 am
- Thursday 14th July from 11:15 am to 12:00 am
- Friday 15th July from 11:15 am to 12:00 am
- Monday 18th July from 9:15 am to 10:00 am
- Tuesday 19th July from 9:15 am to 10:00 am

Summary of the proposed talk: Accelerators and Beam Dynamics

After a review about the history and most important developments of particle accelerators, the presentation will give an introduction into the dynamics of single particles in a storage ring as well as the description of the beam as an ensemble of many particles. We will explain the techniques that we use to calculate the geometry of a large synchrotron (like the LHC) and we will consider the formalism that allows to obtain beam dimensions and dynamic properties under the influence of the magnetic fields. Nonlinear effects and space charge problems are briefly mentioned. In the end we will show examples of the LHC operation to convince the audience that these machines are running nevertheless!

Prerequisite knowledge and references: CURIOSITY

Biography

Brief CV:

1982-1988 study of physics at the University of Heidelberg and Universite' Scientifique et Medicale Grenoble 1988-1991 PhD Student at DESY, Hamburg 1991-1993 Post Doc at DESY 1993-2008 member of staff at DESY, 1999-2007 coordinator of the HERA storage ring 2008 LHC project associate at CERN since 2009 CERN staff member

Publications:

thousands