

# SUMMER STUDENT LECTURE PROGRAMME 2018

Lecture Title

Lecturer's name

E-mail Address

Short CV

- My first encounter with experimental HEP was in 1984 as a summer student in the UA1 experiment, famous, together with its sister experiment UA2, for the discovery of the W and Z bosons.
- 1985-1995: worked in the DELPHI experiment at LEP on precise measurements of electroweak parameters, particularly Z lineshape and tau polarisation.
- 1995-2000: Development and deployment of trigger system for HERA-B experiment at DESY
- Since 2000: ATLAS experiment at LHC. Activities include development of electronics and software for ATLAS tracker system, development of algorithms for identification of tau leptons. Current engagement is centred around hardware development and test for the upgraded ATLAS tracking system.
- Since 2013, I have been working on studies aiming at the construction of a new, large circular collider at CERN. In particular, I am studying an electron-positron collider which in four steps of operation would allow very precise studies of the Z, W, Higgs, and top-quark.
- Since June this year: Dark Matter experiment DAMIC-M based on CCDs.

Lecture Content

Due to time limitations, I will be concentrating on physics at leptons colliders at the electroweak scale. The two lectures will cover:

- The power of electroweak precision measurements and lessons from LEP;
- Linear versus circular  $e^+e^-$  colliders;
- Precision Higgs physics at a  $e^+e^-$  collider;
- Precision electroweak physics at a future  $e^+e^-$  collider;
- What about a muon collider

Pre-requisites:  
earlier series of lectures  
that the students  
should follow

A broad knowledge of (introductory) particle physics is advantageous. In particular the lectures by Andy Cohen, Ricardo Barbieri, Marumi Kado, and Christophe Grojean

Other pre-requisites: