

Title: Prof.

Lecturer: Paris Sphicas

Date and Times:

- Monday, 1st August from 11:15 am - 12:00 am
- Tuesday, 2nd August from 10:15 am – 11.00 am
- Tuesday, 3rd August from 11.15 am – 12.00 am

Summary of the proposed talk:

Searches for physics Beyond the Standard Model at the LHC

The high-energy frontier has traditionally had one primary goal, to probe directly any uncharted physics waters. This has translated into a gigantic effort to complete the unobserved elements of the Standard Model of particle physics as well as to search for signs of physics beyond. The past year witnessed the long-awaited first high-energy run at the LHC, which delivered proton-proton collisions at a center-of-mass energy of 7 TeV. With the data collected thus far, the LHC experiments have established our understanding of Standard Model processes in this new high-energy regime. With solid base of knowledge, searches for physics beyond the standard model have been launched. Searches for super symmetry as well as for signatures of several possible new exotic physics phenomena have been developed, and new parameter space is being explored. The lecture will review the basic physics motivation for each search, the signatures and the techniques involved in each search.

Prerequisite knowledge and references: Standard Model; Physics of Hadron Colliders

Biography

Brief CV:

- PhD from MIT on the UA1 experiment (worked on jet physics and searches in jet signatures)
- Scientific associate at CERN (UA1, working on heavy flavors), then Wilson fellow at Fermilab (CDF experiment)
- Assistant professor at MIT, 1990, always on CDF, working on top and B physics -- then associate then full professor
- Joined CMS in 1994, working on the trigger and data acquisition system. At CERN since 1997 and Prof of physics at University of Athens since 2002
- In CMS: 2005-06 head of Computing
- Software and Physics, 2007-2009 physics coordinator
- Now working on searches for super symmetry