THEORETICAL PHYSICS SEMINAR

Title: Weighing and reconstructing new physics mass and events at LHC

Speaker: Abhay Kumar Swain, THEPH PRL

Date/Time/Venue: 18th June (Thursday)/4:00 PM/ Room No. 469

ABSTRACT

After successful discovery of the Higgs boson, the Large Hadron Collider (LHC) would confront the major challenge in searching for new physics and new particles. Any such observation necessitates the determination of mass and other quantum numbers like spin, polarisation etc. Many of our theories beyond the Standard Model (BSM) motivated from profound experimental indication of dark matter (DM), trying to accommodate them as some stable BSM particles within these theory. In such scenario, any production of heavy resonance of new particles eventually decay semi-invisibly resulting at least two stable particles in the final state. Reconstruction of these events at hadron colliders together with the mass determination of DM or intermediate particles is challenging and center to this talk. In this talk I will discuss some mass restricting way that can lead us to determine the new particle mass when it decays semi-invisibly. I will also present a new method which can be used for the full reconstruction of the event in the above scenario.

All are welcome to attend