Notre Dame Science
Department of Physics

THE SCALE OF NEW PHYSICS: SYMMETRIES, DARK MATTER & THE LHC

Dr. Daniel Feldman
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4:00 P.M. NSH 415

With an emphasis on the mass scale of new physics, I will discuss several well motivated models of particle interactions that give rise to testable signatures at the CERN Large Hadron Collider (LHC), as well as complimentary signatures that are being probed by a collection of on going dark matter (DM) experiments. In particular, I will discuss the present and future prospects for detecting signals of supersymmetry at the LHC within the framework of supergravity and strings, and the interesting new collider physics of a recently proposed class of models which admit dark matter and dark charge through a gauge invariant dark sector. Dark matter detection prospects, such as annihilations in the galactic halo and scattering in terrestrial experiments will also be discussed. I will aim to provide a bridge between these different model classes via the concept of hidden symmetries, which as I will describe, exists in a very broad class of new models of fundamental particle interactions.

Particle Physics Seminar

All interested persons are cordially invited to attend.