Particle Physics Seminar

Searches for New Physics Through Third Generation Particles at the ATLAS Detector

Tuesday

November 15

4:00 P.M.

Rm 415 NSH

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The Standard Model (SM) has been central to particle physics for decades, and its success in predicting observational results has culminated in the 2012 discovery of a Higgs boson at the Large Hadron Collider. However, the theory is considered 'not natural', requiring finely-tuned parameters to allow for the precise cancellation of large radiative corrections to the Higgs boson mass. In pursuit of a more natural theory, extensions to the SM have been proposed that would stabilize the Higgs boson mass and resolve the hierarchy problem (supersymmetry, extended Higgs sectors, models with vector-like quarks). This presentation will focus on several ATLAS searches for new physics involving third generation particles, both targeting extended Higgs sectors and vector-like quarks.