

TUESDAY

JANUARY 26

4:00 P.M.

RM 415 NSH

Is the 3rd generation special? Measurements in top events at CMS

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The large mass of the top quark and its expected uniquely strong coupling to the Higgs boson suggest a connection between the third generation and the mechanism of electroweak symmetry breaking. New physics in this mechanism is likely to modify the properties of top quark events from the standard model expectations, and top partners are a common prediction to resolve the hierarchy problem. Furthermore, the top quark is the only quark that decays before hadronising, which makes precision measurements of its properties an ideal laboratory to test perturbative QCD and probe for new physics. In this presentation I focus on the search for a top superpartner and precision spin measurements in events with a top quark and antiquark.