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Type: **Afternoon Session**

Invisible Decays in Higgs Pair Production

Thursday, April 20, 2017 5:45 PM (15 minutes)

In this talk we will discuss the present status of theoretical studies and experimental searches performed in order to measure the di-Higgs process in various standard model (SM) final states. Furthermore, we will review the prospects of observing such channels at the 14 TeV high luminosity (HL) run of the large hadron collider (LHC). We will then discuss the prospects of observing certain non-standard final states in the di-Higgs category. Our focus will especially be on the scenario where one of the Higgs decays to a pair of b -jets and the other decays invisibly. We discuss the reach of the HL-LHC when (i) the production cross-section is exactly SM-like and (ii) when one includes a heavy scalar coupled to the top quarks and the SM Higgs. We will also review some other potential exotic final states.

Primary author: BANERJEE, Shankha (Unite Reseaux du CNRS (FR))

Co-authors: BATELL, Brian Thomas (University of Pittsburgh (US)); SPANNOWSKY, Michael (IPPP Durham)

Presenter: BANERJEE, Shankha (Unite Reseaux du CNRS (FR))

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