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The 4 tau signature of resonant H->hh events at the LHC and its interpretation in beyond-standard-model scenarios

Whilst the discovered Higgs boson has so far shown no significant deviation from standard model predictions, there remains the possibility that it could be part of a larger spectrum of exotic Higgs particles, such as those found in supersymmetric standard model theories. In this talk I will explore part of this spectrum by considering the phenomenology of the 4 tau final state from the pair production of lighter (pseudo)scalar Higgs bosons. I will focus on the interpretation of this channel within beyond-standard-model theories, particularly focusing on the next-to-minimal supersymmetric standard model. I will also explore the 4 tau signature from an experimental perspective, summarizing LHC Run I results, and considering the potential from Run II.

Author: Mr AGGLETON, Robin (University of Southampton/Rutherford Appleton Laboratory/University of Bristol)

Co-authors: Prof. SHEPHERD-THEMISTOCLEOUS, Claire (Rutherford Appleton Laboratory); Dr BARDUCCI, Daniele (LAPTh, Universite Savoie Mont Blanc); Prof. MORETTI, Stefano (University of Southampton/Rutherford Appleton Laboratory)

Presenter: Mr AGGLETON, Robin (University of Southampton/Rutherford Appleton Laboratory/University of Bristol)

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