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A Dark Horse in Search for Non-Resonant Double Higgs

Friday, 7 December 2018 13:30 (30 minutes)

We propose a novel method for measuring the triple Higgs coupling at the LHC. We choose the hh -> (b b)(l+l-MET) process, as a concrete example, which is least investigated due to huge backgrounds. The method relies on two new kinematic functions, Topness and Higgsness, which respectively characterize features of ttbar (major background) and hh events. It leads to a surprisingly high signal significance compared to existing results without employing sophisticated machine learning techniques. Our approach is applicable to different final states such as (b b)(j j l MET) and (bb)(tautau), as well as searches for other BSM particles. Reference: arXiv:1807.11498

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