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Constraining the self-coupling of the Higgs boson at the CMS experiment using full Run 2 pp collision data at $\sqrt{s} = 13$ TeV

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Currently, the most important mandate of the LHC physics programme is to measure the self-coupling (λ) of the Higgs boson. This parameter is crucial for describing the shape of the Higgs potential. At the LHC pair production of the Higgs boson provides direct access to λ , though the event rate is extremely small in the standard model. However, contributions from new physics beyond standard model can potentially enhance the event yield even with limited amounts of data collected so far. Both the ATLAS and the CMS collaborations are studying Higgs pair production using various final states. In this talk I will present the strategies and the most important results obtained by the CMS experiment using full Run-2 data delivered by the LHC proton-proton collision at the centre of mass energy of 13 TeV.

Session

Higgs Physics

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