

Higgs Hunting 2022



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Search for CP violation in the tau Yukawa coupling with CMS

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Recent results from the study of the CP structure of the tau Yukawa coupling shed light on new experimental observables sensitive to CP violation. The talk will review the methods (impact parameter, neutral pion and polarimetric vector methods) and validation techniques employed during Run 2 for the different tau tau final states. The sensitivity of this measurement relies on an efficient hadronic tau identification and a precise separation of their different decay modes. Prospects for Run 3 and HL-LHC will be presented, including kinematic fit techniques to reconstruct the tau lepton momenta.

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Classification de Session: Young scientist forum