

Analysis strategy for a search for a high mass resonance associated with a boson production and an invisible particle with PPS tagged protons

Content

This work presents an analysis proposal for a search for a heavy scalar particle produced in proton-proton elastic collisions at 13 TeV via a Central Exclusive Process (CEP), tagged with the Proton Precision Spectrometer (PPS) and associated with a boson detected in the central region of the Compact Muon Solenoid (CMS) detector. The proposed analysis is done by evaluating the proton mass spectrum in the [800, 1600] GeV range. Additionally, the analysis would be used with data recorded by the CMS detector and the PPS during the 2018 run. In this proposal, I present the analysis strategy using Monte Carlo simulations and a Asimov dataset.

Summary

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