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Tau Identification at CMS in Run II (12' + 3')

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During LHC Long Shutdown 1 necessary upgrades to the CMS detector were made. CMS also took the opportunity to improve further particle reconstruction. A number of improvements were made to the Hadronic Tau reconstruction and Identification algorithms. In particular, electromagnetic strip reconstruction of the Hadron plus Strips (HPS) algorithm was improved to better model signal of pi0 from tau decays. This modification improves energy response and removes the tau footprint from isolation area. In addition to this, improvement to discriminators combining isolation and tau life time variables, and anti-electron in MultiVariate Analysis technique was also developed. The results of these improvements are presented and validation of Tau Identification using a variety of techniques is shown.

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