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Refining Tau Identification with Domain Adaptation Techniques at CMS

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Hadronically decaying tau leptons are a challenging signature to study given it can be mimicked by quark and gluon jets, electrons, or muons. The identification of this signature via a convolutional neural network performed by CMS during the LHC Run 2 brought a massive improvement with respect to previous strategies. To further improve the identification and reconstruction of hadronic decays of tau leptons, CMS has deployed, as of the start of Run 3, a new algorithm: DeepTau v2.5. This poster presents the performance resulting from these improvements in the network architecture using early Run 3 data and showcases the use of domain adaptation techniques to improve the modelling of data.

Secondary track

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