

Identification of hadronic tau decays using a deep neural network with the CMS experiment at LHC

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Tau leptons are a key ingredient to perform many Standard Model measurements and searches for new physics at LHC. The CMS experiment has released a new algorithm to discriminate hadronic tau lepton decays against jets, electrons, and muons. The algorithm is based on a deep neural network and combines fully connected and convolutional layers. It combines information from all individual reconstructed particles near the tau axis with information about the reconstructed tau candidate and other high-level variables. Many CMS Run 2 analyses have already benefitted from the improvement brought in performance. The algorithm is presented together with its measured performance in CMS Run 2 data.

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