

Tracker and Calorimeter Performance for the Identification for Hadronic Tau Lepton Decays in ATLAS

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Tau leptons will play an important role in the physics program at the LHC. They will be used not only in searches for new phenomena like the Higgs boson or Supersymmetry and electroweak measurements but also in detector related studies like the determination of the missing transverse energy scale.

Identifying hadronically decaying tau leptons requires good understanding of the detector performance, combining the calorimeter and tracking detectors. We present the current status of the tau reconstruction and identification at the LHC with the ATLAS detector.

The identification efficiencies are measured by $W \rightarrow \tau \nu$ and $Z \rightarrow \tau \tau$ events, and compared with the prediction of the Monte Carlo simulation. The performance of the fake tau rejection is also estimated in jet-enriched data samples from dijets, multi-jets, γ +jets and Z +jets events.

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