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Tau reconstruction and identification in the ATLAS experiment (POSTER)

In the ATLAS detector, hadronic decays of tau leptons are reconstructed as collimated jets with low track multiplicity. Due to the background from QCD multijet processes, efficient tau identification techniques with large jet rejection are essential. Since single variable criteria are not enough to efficiently separate them from jets and electrons, modern multivariate techniques are used. In ATLAS, several advanced algorithms are applied to identify taus, including a projective likelihood estimator and boosted decision trees. All multivariate methods use several variables exploiting detailed information from calorimeter and tracking detectors. The algorithms and their performance are presented in details, using high energy data collected at the ATLAS experiment during the 2012 run and simulation data.

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