



ID de la contribución : 652

Tipo : Poster

Performance of the Shower deconstruction algorithm for top tagging in ATLAS

This poster describes the performance of the shower deconstruction algorithm, a jet tagging algorithm, using proton-proton collisions at a centre of mass energy of $\sqrt{s} = 8$ TeV. Data recorded with the ATLAS detector corresponding to an integrated luminosity of 14.2 fb⁻¹ are considered. Using small-radius jets to probe the substructure of a large-radius jet, shower deconstruction assigns a probability based on an approximate parton shower model, that the jet originated from a massive particle. In this poster, the shower deconstruction algorithm is investigated to identify jets produced from boosted, hadronically decaying top quarks. The performance is evaluated using events enriched in top-quark pairs in the lepton plus jets final state and a sample of dijet events. The distribution of the shower deconstruction observable, the likelihood ratio $\chi_{\{SD\}}$, is compared between data and simulation and the expected performance of shower deconstruction is compared to that of other tagging algorithms.

Summary

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Clasificación de temáticas : Detector RD and Performance