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The Soft Muon Tagger for the identification of b-jets in ATLAS

b-tagging plays a fundamental role at LHC, as it helps in the identification of heavy particles that decay to bottom quarks, such as the top quark, Higgs boson or heavy exotic particles. The Soft Muon Tagger (SMT) allows jets from b-quarks to be identified, taking advantage of the presence of a muon coming from semileptonic decays of b-hadrons. The development of this new b-tagger in ATLAS will be described, showing that, despite the low efficiency of the jet-muon association (based on the angular distance), the discriminating power of the associated muon variables is sufficient to reject light jets. An enhanced performance has been reached for all light jet rejection working points by adding the SMT output to the best performing multivariate b-tagger in ATLAS (MV2).

Experimental Collaboration

ATLAS Collaboration

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