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Real-time flavor tagging selection in ATLAS

In high-energy physics experiments on hadron colliders, online selection is crucial to reject most uninteresting collisions. In particular, the ATLAS experiment includes b-jet selections in its trigger strategy, in order to select final states with heavy-flavor content and enlarge its physics potentials.

Dedicated selections are developed to quickly identify fully hadronic final states containing b-jets, while rejecting light QCD jets, and maintain affordable trigger rates without raising jet energy thresholds. ATLAS successfully operated b-jet trigger selections during both 2011 and 2012 data-taking campaigns and hard work is on-going now to improve the performance of tagging algorithms for coming Run2 in 2015.

An overview of the ATLAS b-jet trigger strategy and its performance on real data is presented in this contribution, along with future prospects. Data-driven techniques to extract the online b-tagging performance, a key ingredient for all analyses relying on such triggers, are also discussed and results presented.

Summary

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