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New ATLAS b-tagging algorithm for Run 3

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The ability to identify jets containing b-hadrons (b-jets) is of essential importance for the scientific programme of the ATLAS experiment, underpinning the observation of the Higgs boson decay into a pair of bottom quarks, Standard Model precision measurements, and searches for new phenomena. The ATLAS flavour tagging algorithms rely on powerful multivariate and deep machine learning techniques. These algorithms exploit tracking information and secondary vertex reconstruction in jets to establish the jet's flavour. Both specifically designed observables sensitive to the distinct properties of b-jets and neural networks operating directly on the charged-particle tracks within the jet are used. In this poster, we review the state-of-the-art in flavour tagging algorithms developed by the ATLAS collaboration and of their expected performance using simulated data.

In-person participation

Yes

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