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Quark versus Gluon Jet Tagging

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Classifying a jet initiated from quarks or gluons based on its substructure is one of the most challenging problems at the LHC. The difference in the color structure of quarks and gluons can reflect in the amount of energy loss or the pattern of radiated energy of a jet originated from quarks or gluons. The low-level detector output can be used to identify parton jets using Machine learning techniques. Here we will present the performance of the existing quark versus gluon jet tagger in the ATLAS experiment for RUN 2 data with a 60% efficiency for selecting a quark-initiated jet. We will also present preliminary studies for a new forward tagger using the ATLAS calorimeter where the granularity is coarse.

Apply to be considered for a student ; award (Yes / No)?

No

Level for award;(Hons, MSc, PhD, N/A)?

N/A

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