

# DIS2023: XXX International Workshop on Deep-Inelastic Scattering and Related Subjects



Contribution ID: 43

Type: **Parallel talk**

## Flavour Tagging with Graph Neural Network with the ATLAS Detector

*Thursday, 30 March 2023 10:50 (20 minutes)*

The identification of jets containing b-hadrons is key to many physics analyses at the LHC, including measurements involving Higgs bosons or top quarks, and searches for physics beyond the Standard Model. In this contribution, the most recent enhancements in the capability of ATLAS to separate b-jets from jets stemming from lighter quarks will be presented. The improved performance originates from the usage of state-of-the-art machine learning algorithms based on graph networks. A factor of more than 2 to reject light- and c-quark-initiated jet is observed compared to the current performance. The expected performance of this algorithm at the High-Luminosity LHC (HL-LHC) will also be discussed in detail.

### Submitted on behalf of a Collaboration?

Yes

### Participate in poster competition?

No

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**Session Classification:** WG4

**Track Classification:** WG4: QCD with Heavy Flavours and Hadronic Final States