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# From Detection to Flavour Tagging: Supporting Four-Top Quarks Analyses in ATLAS

The identification of hadronic jets originating by either bottom, charm or light quarks, called flavor tagging, is a fundamental technique in many analyses at the LHC. Since 2017, this has been performed using deep learning models based on graph neural networks architecture, leveraging information from the inner tracking detector and the calorimeters. Accurate tagging is especially critical for identifying jets produced in rare processes such as the simultaneous production of four top quarks, where distinguishing signal from background is particularly challenging. In this talk, I will give an overview of light jet flavor tagging and discuss how uncertainties in tagging performance and efficiencies can significantly impact the precision of such measurements.

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