Calibration of the GN2 b-tagging algorithm with ttbar and Z+jets events using 140 fb⁻¹ of ATLAS proton-proton collsion data at sqrt(s)=13 TeV

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Jet flavour-tagging algorithms to identify hadronic jets containing b-hadrons are crucial tools for searches of Higgs boson pair production in the ATLAS experiment at the LHC, due to the large branching ratio of the H–>bb process. GN2, the state-of-the-art jet flavour-tagging algorithm developed by ATLAS, delivers a performance that significantly surpasses its predecessors and is expected to significantly enhance the sensitivity of Higgs pair production searches featuring b-quarks in their final states. This talk presents the calibration of GN2's performance on b, c, and light-flavour jets on real data, using ttbar and Z+jets candidate events selected from 140 fb^-1 of proton-proton collision data collected at a center of mass energy of sqrt(s)= 13 TeV between 2015 and 2018.

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