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Performance and calibration of b-tagging with the ATLAS experiment at LHC Run-2

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The identification of b-flavoured jets 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. The capacity of ATLAS to efficiently tag b-jets has been enhanced for Run-2 with the addition of the Insertable B Layer (IBL), and improvements in the tracking and b-tagging algorithms. In the algorithm optimisation special emphasis has been placed in improving the performance for reconstructing high pT b-jets, addressing the challenges posed by track and vertex reconstruction in such an environment. The efficiency and rejection power of these algorithms have been calibrated on data taken in 2015, in particular by exploiting the copious production of b-jets in top quark decays, complemented by studies in multi-jet events. First results from the 2016 data will also be shown.

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