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Inclusive flavour tagging at LHCb

We present a new algorithm for tagging the production flavour of neutral B^0 and B_s^0 mesons in proton-proton collisions. It is based on a deep neural network, DeepSets, and exploits a comprehensive set of tracks associated with the hadronization process. The algorithm is calibrated on data collected by the LHCb experiment at a centre-of-mass energy of 13 TeV. This inclusive approach enhances the flavour tagging performance beyond the established same-side and opposite-side tagging methods. The gains in tagging power offer significant benefits for precision measurements of CP violation and mixing in the neutral B meson systems.

Secondary track

T07 - Flavour Physics and CP Violation

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Session Classification: T12

Track Classification: T12 - Data Handling and Computing