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Inclusive flavour tagging at LHCb

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We present a new algorithm for tagging the production flavour of neutral 🛛 and 🕬 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 13TeV. 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 🖾 violation and mixing in the neutral 🖄 meson systems.

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