

2024 ATLAS-CMS Flavour Tagging Workshop

Monday 9 September 2024 - Friday 13 September 2024



Book of Abstracts

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Flavour tagging in ATLAS: from RUN1 to RUN3

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Flavour Tagging in CMS: from RUN1 to RUN3

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Flavor Tagging Efficiency Parametrisations with Graph Neural Networks in ATLAS

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Classifying the flavour of hadronic jets, a process known as jet flavour-tagging, is crucial for analyses targeting final states featuring b or c -hadrons. Many of these analyses rely on Monte Carlo simulated samples to model the signal and background processes: in such cases, when stringent jet- flavour-tagging selections are applied to the candidate events, modelling the simulated processes can be challenging, especially when the selection discards a significant portion of the simulated statistic. In such cases, techniques that weight the events with their probabilities of being selected, rather than accepting or discarding them straightaway, enable a better usage of the simulated data. The precision of these techniques relies on an accurate parametrization of the dependency of the jet flavour-tagging efficiency function over the conditions under which the jets are produced. In this talk, an innovative technique to parameterize this function using GNNs is described, along with its implementation in the context of the measurement of the $(W/Z)H, H \rightarrow bb/cc$ process, which marks its inaugural application.

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Algorithms - discussion

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