EUROPEAN AI FOR
FUNDAMENTAL PHYSICS
CONFERENCE
EuCAIFCon 2024

Contribution ID: **239**   Type: **not specified**

Flavour Tagging in Run 3 at LHCb

One of the main goals of the LHCb experiment is to study charge-parity violation by looking at the decays of the large variety of beauty mesons created in pp collisions at LHC. Such studies are particularly challenging in the presence of B–B oscillations as the B meson flavour at production time might be different from the flavour at its decay time. Flavour Tagging algorithms exploit the correlations between the B meson production flavour and features of the global event to tag the candidate as B or B. Together with the tagging decision, the probability of a wrong tagging decision must be provided which is estimated through the application of Machine Learning algorithms. In Run 3 of the LHC, the LHCb experiment operates at the average non-empty bunch crossing rate of 30 MHz with an upgraded detector and a solely software-based trigger. The purpose of this contribution is to introduce the strategy and developments of the Flavour Tagging algorithms for Run 3.

Presenter: OLOCCO, Micol (TU Dortmund)

Track Classification: Session B