Contribution ID: **510**   Type: **Poster**

Enhancing Prompt Lepton Identification: Development and Optimization of the PLIT Tagger

Friday, 19 July 2024 20:40 (20 minutes)

Within the ATLAS Experiment the Prompt Lepton Isolation Tagger (PLIT) served as an essential tool to distinguish between prompt muons originating from the decays of W and Z bosons and non-prompt muons generated in the semi-leptonic decays of b- and c-hadrons. Its central role was to effectively mitigate the presence of fake and non-prompt leptons in various multi-lepton final state analyses and had been extensively used in Run-2. The poster will present the ongoing efforts in developing and optimizing this tagger for Run-3 data analyses. Through the integration of new features and the exploration of novel machine learning algorithms, the tagger's discrimination power can be enhanced, allowing for more precise identification of prompt leptons originating from electroweak boson decays.

Alternate track

I read the instructions above

Yes

Primary authors: MARICIC, Ema (CEA Paris-Saclay (FR) & Institute of Physics Belgrade (RS)); DELIOT, Frederic (Université Paris-Saclay (FR))

Presenter: MARICIC, Ema (CEA Paris-Saclay (FR) & Institute of Physics Belgrade (RS))

Session Classification: Poster Session 2

Track Classification: 12. Operation, Performance and Upgrade (incl. HL-LHC) of Present Detectors