Contribution ID: **297**   Type: **Parallel session talk**

Tau lepton identification in displaced topologies using machine learning at CMS

Friday 19 July 2024 16:45 (17 minutes)

Many extensions of the standard model can give rise to tau leptons produced in non-conventional signatures in the detector. For example, certain long-lived particles can decay to produce taus that are displaced from the primary proton-proton interaction vertex. The standard tau reconstruction and identification techniques are suboptimal for displaced tau leptons, which require specialized approaches. Recent advances in machine learning (ML) have demonstrated the advantages of graph convolutional neural networks for tagging or identifying different kinds of jets. However, the application of such ML models for displaced tau signatures has not yet been extensively explored at CMS. This talk will present the use of such state-of-the-art ML techniques for identifying hadronically decaying displaced tau leptons.

Alternate track

I read the instructions above

Yes

Authors: CMS; SHCHEDROLOSIEV, Mykyta (Deutsches Elektronen-Synchrotron (DE))

Presenter: SHCHEDROLOSIEV, Mykyta (Deutsches Elektronen-Synchrotron (DE))

Session Classification: Computing and Data handling

Track Classification: 14. Computing, AI and Data Handling