Contribution ID: **24** Type: **not specified**

Reconstruction of tau decays at Future Collider Experiments using Multivariate Methods and Machine Learning

The physics programs at lepton and future colliders offer diverse prospects for precision studies due to clean experimental environments. However, many challenges in the reconstruction remain. One of them is the reconstruction of tau leptons. The goal of this project is to develop MVA- or ML-based methods to identify and accurately reconstruct hadronic and leptonic tau decays. A possible application and benchmark is the Higgs self-coupling analysis at the ILD detector, where improvements to tau identification could increase the sensitivity in a variety of channels and decay modes.

Group

FH-FTX

Project Category

B1. Physics data analysis and performance (software-oriented)

Special Qualifications

Proficiency in programming in either Python or C++ are greatly beneficial.

DESY Site

Hamburg

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