Contribution ID: 12

Type: not specified

Broad Physics Opportunities and Discovery Potential in the Forward Region at the LHC

Tuesday 13 May 2025 14:54 (23 minutes)

The far-forward direction at the Large Hadron Collider exhibits an intense beam of TeV hadrons and other particles, bridging the energy and intensity frontiers. The hadrons'subsequent decays produce the most energetic human-made neutrino and muon beam, and potentially, new particles. The resulting Standard Model flux offers a powerful probe of non-perturbative QCD, with implications for both central LHC experiments and connections to cosmic-ray and neutrino observatories. Meanwhile, the same environment presents discovery opportunities for physics beyond the Standard Model, accessible through current forward experiments like FASER and future detectors at the proposed Forward Physics Facility. In this talk, I will highlight the broad physics reach of forward measurements at the LHC and the compelling discovery prospects in the upcoming data-taking runs.

Presenter: FIEG, Max (University of California Irvine (US)) **Session Classification:** Tuesday Afternoon Session 1