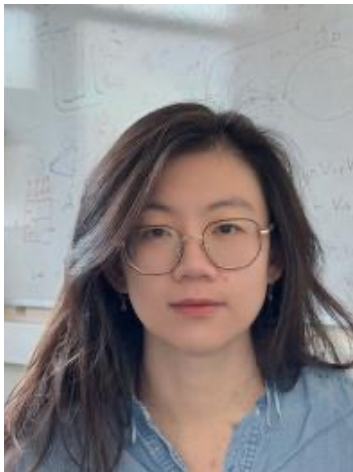


Precision Electroweak Measurements and Top Physics at LHCb



Speaker: Dr. Menglin Xu
Host: Dr. Xuhao Yuan
Time: 10:00 am, 10th July, 2026
Location: B410 Main Building
Indico: indico.ihep.ac.cn/event/30165
Zoom ID: 6895 2165 897
Password: 260710

Abstract:

Electroweak unification theory, one of the greatest successes of the Standard Model, predicts and accurately describes elementary particles and their interactions. Precise measurements of its fundamental parameters provide stringent tests of the Standard Model and a powerful probe for new physics beyond collider scales. As a forward spectrometer at the LHC with unique kinematic acceptance, LHCb offers a distinctive platform for electroweak and top-quark physics in the forward region. This summary presents LHCb's key results in these fields, including precise measurements of W/Z boson masses and the weak mixing angle, studies on Z boson polarization and production cross sections, and the latest top-quark charge asymmetry result. Future prospects of precision electroweak and top-quark measurements at LHCb are also outlined.

About the speaker:

Menglin Xu is currently a Research Fellow at CERN. She obtained her doctoral degree from Central China Normal University in 2021. She carried out postdoctoral research at the University of Warwick, UK from 2021 to 2024. Her research directions include precision electroweak measurements, top-quark physics studies and high-precision simulations with the LHCb experiment. She once worked as the convenor of the LHCb Electroweak and Standard Model Physics Analysis Group. At present, she serves as the representative of the LHCb Collaboration in the LHC Electroweak Precision Physics Working Group, the LHCb Detector Simulation Coordinator, and the convenor of the simulation area of the High Energy Physics Software Foundation (HSF). Thanks to the groundbreaking contributions to electroweak physics and detector software, she received the University of Warwick Postdoctoral Prize and the LHCb Collaboration Early Career Award successively from 2023 to 2024.