

QCD Issues in Searches for New Physics with the ATLAS Detector

Tuesday, 28 August 2018 17:39 (18 minutes)

QCD Issues in Searches for New Physics with the ATLAS Detector

The ATLAS experiment at the LHC has a broad search program covering a wide variety of models of physics beyond the Standard Model, from simplified models to UV complete models like supersymmetry. In many searches, the final states include one or more hadronic object, and QCD constitutes a crucial background, the control and understanding of which is critical for sensitivity to new physics. Searches make use of QCD scaling rules for background estimation, jet sub-structure for signal and background separation, and higher-order calculations and resummation for signal cross-sections. Additional complex QCD issues arise in searches for R-hadrons —hadrons that include long-lived supersymmetric particles —or other new colored particles. This talk summarizes recent search results from the ATLAS experiment, highlighting techniques and issues that most strongly interact with QCD.

Presenter: SAIMPert, Matthias (Deutsches Elektronen-Synchrotron (DE))

Session Classification: EW, Higgs and BSM

Track Classification: EW, Higgs and BSM