Contribution ID: 23 Type: Poster

pTmiss reconstruction and performance with Run-2 and Run-3 data at the ATLAS experiment

Tuesday, 30 July 2024 16:20 (20 minutes)

This poster presents the reconstruction of missing transverse momentum (pTmiss) in proton-proton collisions, in Run-2 and Run-3 data-taking at the ATLAS experiment. This is a challenging task involving many detector inputs, combining fully calibrated electrons, muons, photons, hadronically decaying τ -leptons, hadronic jets, and soft activity from remaining tracks. Several pTmiss 'working points' are defined with varying stringency of selections, which balance improving resolution or bias for both Run-2 and Run-3. The pTmiss performance is evaluated using data and Monte Carlo simulation, primarily using events consistent with leptonic Z-decays. Finally, methods used to calculate systematic uncertainties on the soft pTmiss component are presented, including recent progress on a novel approach to fully calibrate the soft term.

Primary authors: DEIANA, Allison; RUTHERFORD COLMENARES, Sebastian (Cavendish Laboratory, University of Cambridge)

Presenter: RUTHERFORD COLMENARES, Sebastian (Cavendish Laboratory, University of Cambridge)

Session Classification: Poster session