

## pT<sub>miss</sub> reconstruction and performance with Run-2 and Run-3 data at the ATLAS experiment

*Tuesday, July 30, 2024 4:20 PM (20 minutes)*

This poster presents the reconstruction of missing transverse momentum ( $p_{T\text{miss}}$ ) 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  $\tau$ -leptons, hadronic jets, and soft activity from remaining tracks. Several  $p_{T\text{miss}}$  ‘working points’ are defined with varying stringency of selections, which balance improving resolution or bias for both Run-2 and Run-3. The  $p_{T\text{miss}}$  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  $p_{T\text{miss}}$  component are presented, including recent progress on a novel approach to fully calibrate the soft term.

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