Canadian Association of Physicists

Association canadienne des physiciens et physiciennes

Contribution ID: **76** Type: **Oral Competition (Graduate Student) / Compétition orale (Étudiant(e) du 2e ou 3e cycle)**

(G*) Precision measurement of the Z-boson transverse momentum with the ATLAS detector

Monday 7 June 2021 16:55 (10 minutes)

The ATLAS Experiment at CERN is a general-purpose particle physics detector that measures properties of particles created in high-energy proton-proton collisions fueled by CERN's Large Hadron Collider (LHC). Searching for undiscovered particles is exciting, but there is still much to be learned about the particles that we know to exist in the Standard Model by making precision measurements of these particles. One area where increased precision is needed is the electroweak sector, where potential tension exists between theoretical predictions and the current best measurements on important properties such as the mass of the W-boson. In this talk, I will discuss our precision measurement of the transverse momentum of the Z-boson, a vital stepping stone to improving our W-boson mass measurement. I will explain how this difficult measurement has been made possible thanks to a unique reduced-background ATLAS dataset.

Primary author: DAVIS-PURCELL, Ben (Carleton University (CA))

Presenter: DAVIS-PURCELL, Ben (Carleton University (CA))

Session Classification: M4-7 Exploring the Energy and Precision Frontier II (PPD) / Frontière d'énergie et de précision II (PPD)

Track Classification: Particle Physics / Physique des particules (PPD)