Analysis Results of 13 TeV ATLAS Open Data: WZ Region Kinematics

Ibrahim H.I. ABUSHAWISH ibeuler

May 4, 2025

Histograms

The following histograms illustrate the distributions of various kinematic variables in the WZ region. The corresponding yields for each histogram are also provided.

Missing Transverse Energy (E_T^{miss})

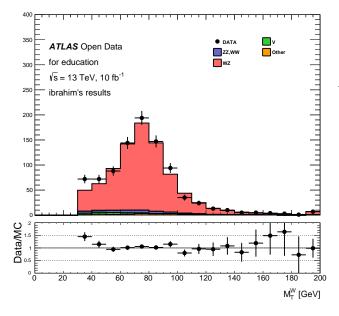


Figure 1: Transverse mass (M_T^W) distribution.

Yields:

• **Data:** 918.00 ± 30.30

• V: 19.91 ± 2.36

• **VV:** 37.33 ± 0.35

• Other: 15.41 ± 1.20

• **WZ**: 799.43 ± 3.46

Dilepton Transverse Momentum $(p_T^{\ell\ell})$

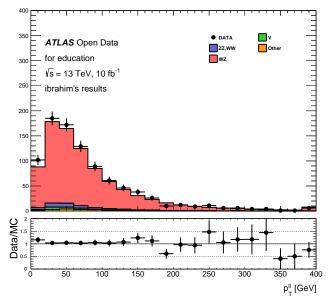


Figure 2: Dilepton transverse momentum $(p_T^{\ell\ell})$ distribution.

Yields:

• **Data:** 918.00 ± 30.30

• V: 19.91 ± 2.36

• **VV**: 37.33 ± 0.35

• Other: 15.41 ± 1.20

• **WZ:** 799.43 ± 3.45

Three-Lepton Energy (E)

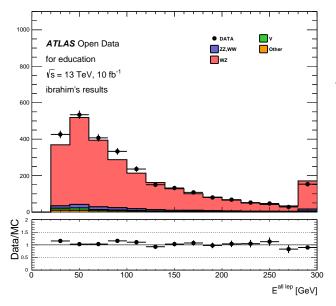


Figure 3: Three-lepton energy (E) distribution.

Yields:

• **Data:** 2754.00 ± 52.48

• V: 59.74 ± 3.98

• **VV:** 111.99 ± 0.59

• Other: 46.23 ± 2.05

• **WZ:** 2398.30 ± 5.87

Three-Lepton Pseudorapidity (η)

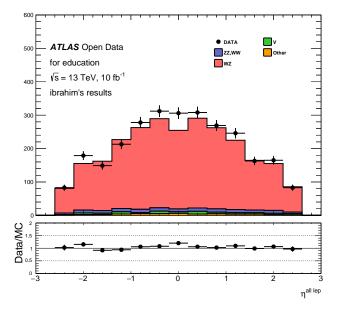


Figure 4: Three-lepton pseudorapidity (η) distribution.

Yields:

• **Data:** 2754.00 ± 52.48

• V: 59.74 ± 4.08

• **VV**: 111.99 ± 0.61

• Other: 46.23 ± 2.09

• **WZ**: 2398.30 ± 5.99

Three-Lepton Azimuthal Angle (ϕ)

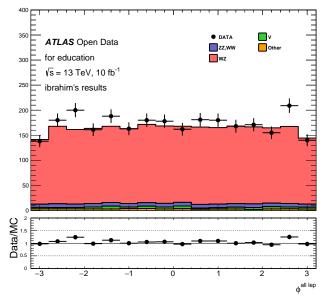


Figure 5: Three-lepton azimuthal angle (ϕ) distribution.

Yields:

• **Data:** 2754.00 ± 52.48

• V: 59.74 ± 4.08

• **VV**: 111.99 ± 0.61

• Other: 46.23 ± 2.09

• **WZ:** 2398.30 ± 5.99

Three-Lepton Transverse Momentum (p_T)

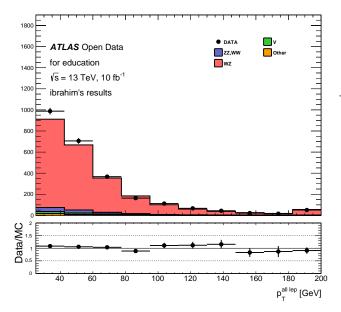


Figure 6: Three-lepton transverse momentum (p_T) distribution.

Yields:

• Data: 2537.00 ± 50.37

• V: 49.68 ± 3.70

• **VV:** 104.08 ± 0.59

• Other: 38.57 ± 1.89

• **WZ**: 2226.79 ± 5.71