



Contribution ID: 39

Type: **Poster + flash-talk**

## Production of Z boson in association with high-pt jet (Z-collinear)

*Monday 1 August 2022 17:55 (5 minutes)*

Cross-section measurements for a Z boson produced in association with high-transverse-momentum jets ( $p_T > 100$  GeV) and decaying into a charged-lepton pair are presented. The measurements are performed using proton-proton collisions at  $\sqrt{s} = 13$  TeV corresponding to an integrated luminosity of  $139 \text{ fb}^{-1}$  collected by the ATLAS experiment at the LHC. Measurements of angular correlations between the Z boson and the closest jet are performed in events with at least one jet with  $p_T > 500$  GeV. Event topologies of particular interest are the collinear emission of a Z boson in dijet events and a boosted Z boson recoiling against a jet. Fiducial cross sections are compared with state-of-the-art theoretical predictions. The data are found to agree with next-to-next-to-leading-order predictions by NNLOjet and with the next-to-leading-order multi-leg generators MadGraph5\_aMC@NLO and Sherpa.

### Preferred track

Jets & QCD at High Scales

### Subfield

HEP experiment

### Attending in-person?

Yes

### On behalf of collaboration?

ATLAS Collaboration

**Presenter:** LAURIER, Alexandre (Carleton University (CA))

**Session Classification:** Flash Talks

**Track Classification:** Jets and QCD at high scales