

Southern African Large Telescope Spectroscopy of BL Lacs for the CTA project

Friday, 16 July 2021 19:18 (12 minutes)

In the last decade, very-high-energy gamma-ray astronomy has reached maturity: over 200 sources have been detected, both Galactic and extragalactic by ground-based experiments. At present, Active Galactic Nuclei (AGN) make up about 40% of the 200+ sources detected at very high energies with ground-based telescopes, the majority of which are blazars, i.e. their jets are closely aligned with the line of sight to Earth and three quarters of which are classified as high-frequency peaked BL Lac objects. One challenge to studies of the cosmological evolution of BL Lacs is the difficulty of obtaining redshifts from their nearly featureless, continuum-dominated spectra. It is expected that a significant fraction of the AGN to be detected with the future world-wide Cherenkov Telescope Array (CTA) observatory will have no spectroscopic redshifts, compromising the reliability of BL Lac population studies, particularly of their cosmic evolution. We started an effort in 2019 to measure the redshifts of a large fraction of the AGN that are likely to be detected with CTA, using the Southern African Large Telescope. In this talk, we present some preliminary results of this on-going collaborative multi-facility effort among African, European, North and South American institutions.

Keywords

AGN, BL Lacs, Redshifts, Spectroscopy

Collaboration

CTA

other Collaboration

None

Subcategory

Experimental Results

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Session Classification: Discussion

Track Classification: Scientific Field: GAI | Gamma Ray Indirect