Contribution ID: **225** Type: **Oral Presentation**

Optical spectroscopic observations of unclassified Active Galactic Nuclei in the Fermi-2LAC catalogue

Friday, 3 July 2015 11:50 (20 minutes)

Abstract content
   (Max 300 words)
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Blazars constitute the most violent astronomical objects with relativistic jets emitting radiation at all frequencies. The 2nd Fermi-LAT catalogue of AGN contains 157 sources which are classified as unknown type. All sources lie at high galactic latitudes ($|b| > 10^{\circ}$) with candidate optical and/or radio counterparts within the Fermi 95% error circle. We are undertaking a multi-wavelength campaign to classify a selected number of these sources which exhibit blazar-like characteristics by establishing their optical spectra, Spectral Energy Distributions and searching for variability. We present preliminary optical spectroscopic observations of 15 of these sources obtained with the SAAO 1.9-m telescope and the Southern African Large Telescope (SALT). The low-resolution spectra are mainly featureless as are expected for BL Lac objects, however Ca II K&H, MgIb and/or NaD absorption lines appear to be present, allowing for a first estimation of the redshift range $0.1 < z < 0.8$. The strength of non-thermal jet emission is determined from the depth of the Ca II depression, which is a good indicator whether the targets are potential blazars.

Keywords: BL Lacertae objects: general, galaxies: distances and redshifts

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Dr. B van Soelen
vansoelenb@ufs.ac.za
University of the Free State, Department of Physics

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Primary author: Ms KLINDT, Lizelke (University of the Free State)

Co-authors: Mr VAN SOELEN, Brian (University of the Free State); Dr VÄISÄNEN, Petri (SAAO); Prof. MEINTJES, Pieter (University of the Free State)

Presenter: Ms KLINDT, Lizelke (University of the Free State)

Session Classification: Astro

Track Classification: Track D1 - Astrophysics