Contribution ID: **99** Type: **Oral Presentation**

Spatially resolved stellar kinematics of the CLoGS brightest group early-type galaxies

Monday, 4 July 2022 12:15 (15 minutes)

Galaxy groups within the local Universe contain over 60% of all observable galaxies. Furthermore, galaxy groups host the majority of both baryonic and dark matter content in the Universe. Therefore galaxy groups are excellent laboratories for studying galaxy evolution. Of particular importance are the brightest group early-type galaxies (BGEs) roughly located at the centre of each group's gravitational potential well. By studying the stellar kinematics of these BGEs, we hope to better understand the mass-assembly histories of these galaxies. The Complete Local-Volume Groups Sample (CLoGS) is a statistically complete survey of 53 galaxy groups in the optical, X-ray, and radio bands. We measure the spatially resolved stellar kinematics of the BGEs of 19 of these groups. The spectra of these galaxies are obtained via optical spectroscopy with the Southern African Large Telescope (SALT). The stellar kinematics are obtained with the full-spectrum fitting software pPXF by Cappellari (2017). The radial profiles of both the stellar rotational velocity and the stellar velocity dispersion of some of these BGEs are presented. We find a diverse range of stellar kinematics for the BGEs, for example, some BGEs show strong rotation and others no rotation.

Apply to be considered for a student ; award (Yes / No)?

Yes

Level for award;(Hons, MSc, PhD, N/A)?

MSc

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Session Classification: Astrophysics

Track Classification: Track D1 - Astrophysics