Contribution ID: **65** Type: **Poster**

The identification of ram-pressure-affected galaxies with SAMI/Hector

Tuesday 8 July 2025 12:55 (1 minute)

Cluster environments influence galaxy evolution by regulating star formation activity, notably through ram-pressure stripping (RPS), where the intracluster medium removes cold gas available for star formation as galaxies move through it. This may leave observable signatures, such as gas tails, truncated gas disks, and regions exhibiting intense star formation triggered by compression. Using spatially resolved data from the SAMI and Hector Galaxy Surveys, we identify galaxies undergoing or recently affected by RPS through two different methods: visually classifying the ionized gas distribution into unperturbed, asymmetric, and truncated galaxies, and a quantitative analysis of shape parameters like concentration and asymmetry. The projected phase-space analysis suggests that asymmetric galaxies are likely recent infallers—having crossed $0.5\,R_{200}$ in the past 1 Gyr—whereas truncated and unperturbed galaxies are more broadly distributed, predominantly located at larger clustercentric distances. Central (i.e. $R < 0.5R_{eff}$) star formation activity appears to be comparable across all visual classes, while the outskirts exhibit differences. Unperturbed galaxies maintain relatively constant sSFR values with increasing radius, truncated galaxies exhibit a sharply declining profile, and asymmetric ones indicate an intermediate stage with a gradual decline. This might be attributed to an evolutionary trend linked to the RPS stage, where unperturbed galaxies likely represent recently accreted systems (pre-RPS), while asymmetric and truncated galaxies may correspond to populations undergoing RPS and post-RPS phases, respectively.

Author: CAKIR, OGUZHAN (Macquarie University)

Co-authors: CORTESE, Luca (ICRAR - UWA); OWERS, Matt (Macquarie University)

Presenter: CAKIR, OGUZHAN (Macquarie University)

Session Classification: Poster