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# A Study of Star formation, AGN activity and ionized outflows in Southern Interacting Galaxies using MUSE, UVIT and the SAAO

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## Abstract

The interactions and mergers of gas rich galaxies can trigger star formation in their nuclear and disk regions, leading to starbursts and active galactic nuclear (AGN) activity. Galaxy mergers also lead to the formation of supermassive blackhole pairs that may start accreting gas and become single or dual AGN. The enhanced star formation will ultimately lead to bulge growth accompanied by starburst/AGN feedback activity. Apart from these effects, tidal dwarf galaxies may also form in the extended arms. These processes are all important for galaxy evolution and need to be understood in detail. Our study aims to understand these diverse processes using UV, optical and NIR observations of a sample of southern interacting galaxies for which we have obtained deep, near-IR observations using the SAAO. We use UVIT, NIR SAAO observations and MUSE archival data to find signatures of AGN activity and study its connection with star formation in the surrounding galaxies. The UVIT images show star formation in the tidal tails and in the rings; it is also visible in the H $\alpha$  images obtained from MUSE. We present some preliminary results of our study of these galaxies. The BPT plot of one galaxy shows that it has a LINER like object but the MUSE data reveals that the emission is from a retired galaxy which has similar line ratios as those of a LINER. Some of the galaxies show signatures of dual AGN. The UVIT observations show star formation along the bar in one of the galaxies, which is unusual. We will also briefly discuss results from the other galaxies for which NIR, optical and UVIT data have been obtained.

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