# Impact of the group environment on galaxy evolution

Project Level: Masters
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**Project Description**

It has been known for some time that higher density galaxy environments (galaxy groups and clusters) impact their members' evolution, however, several aspects of the mechanism(s) driving this evolution still remain poorly understood. The quantity and state of hydrogen gas, as the ultimate fuel for star formation, is a key driver of a galaxy's evolution. This makes the study of resolved HI, which is particularly sensitive to interactions with neighbours and the group/cluster medium, a most useful way to gain insights into the mechanisms accelerating galaxy evolution.

This project involves a detailed, resolved HI study of a nearby galaxy group using already reduced HI data from MeerKAT. The project will address various aspects of galaxy evolution in groups – the HI content and HI deficiency of the group galaxies, searching for evidence of galaxy interactions using HI gas kinematics, tidal debris and enhanced star formation.

**Requirements**

The project will involve analysis of reduced MeerKAT HI data. Good Python programming skill is a requirement. Some exposure to software and analysis tools like CASA, CARTA, SoFiA and/or BBarolo would be helpful. These tools will be used in the project and students with no prior knowledge will need to learn these during the project.

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