

## MeerKAT resolved HI in nearby galaxies

*Wednesday, 17 May 2023 13:29 (1 minute)*

I will present new results from two MeerKAT Large Survey Programs - The MeerKAT Fornax Survey (MFS) and MHONGOOSE. The exquisite combined sensitivity and resolution of the MeerKAT telescope has opened the door to exploring the realm of resolved, low column density ( $10^{17} - 10^{18} \text{ cm}^{-2}$ ) neutral hydrogen (HI) emission in a broad range of environments. In the Fornax cluster, we detect (and resolve in most cases) HI in 16 dwarf galaxies that range between  $M_{\text{HI}} \sim 10^6 - 10^9 \text{ Msol}$ . Up until now, galaxies of this HI mass have only been detected in the Local Group. I will present the collection of evidence that results in late type star-forming dwarf galaxies losing their HI in only a few hundred Myr once the tidal and / or hydrodynamical forces in the cluster act on their interstellar medium. I will connect these results to those obtained in lower density environments as observed in MHONGOOSE, which is even more sensitive than the MFS. We detect a previously unknown interacting triplet. The central galaxy contains massive amounts of extra-planar gas and the satellite galaxies are connected via extended HI tails. Tidal forces are a clear component of the interactions, although two of the three galaxies show undisturbed stellar bodies. The HI emission shows coherent regions of high ( $\sim 40 - 90 \text{ km/s}$ ) velocity dispersion, which is caused by two distinct components in the spectra. The multi-component spectra may be a result of an extremely distorted outer HI disk, or the components having different origins.

**Presenter:** KLEINER, Dane (ASTRON)

**Session Classification:** Poster Prizes & closing