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MeerKAT resolved HI in nearby galaxies

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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 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 MHI ~ 10^6 - 10^9 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 (~ 40 - 90 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.

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