

Title

Building a statistical sample of HI emission in fast radio burst host galaxies

Abstract

A key part of understanding the underlying progenitor of fast radio bursts (FRBs) lies in studying their host galaxies. The star-forming neutral hydrogen (HI) gas reveals galaxy history that is not obvious from the stellar content. To date, only six FRB host galaxies have published HI properties. Yet a curious trend has emerged, in that the HI line profiles show asymmetry and disturbed distributions, indicating recent merger activity possibly related to the birth of the FRB progenitors. Building upon OTP 22049 and 23184 programs where HI observations were taken for three FRB hosts, we will follow up four CRAFT FRB localisations to study the HI content of their host galaxies and surrounding environment. This proposal plays to the strengths of MeerKAT in investigating the early trend in asymmetry tracing merger activity in FRB hosts, and is part of an ongoing effort to build up a statistically-significant sample, including awarded GMRT time for Dec $> +20$ degree targets.