MKT-23184

HI emission in the host galaxies of fast radio bursts

Abstract

A key part of understanding the underlying progenitor of fast radio bursts (FRBs) lies in the study of their host galaxies. The star-forming fuel, neutral hydrogen (HI), reveals galaxy history that is not obvious from the stellar content. To date, only three FRB host galaxies have had their HI properties published (with two more to be published imminently). Yet, a curious trend has emerged in that the HI line profiles show asymmetry and disturbed distributions, indicating recent merger activity that could be related to the birth of the FRB progenitors. Building upon programs such as OTP 22049 where HI observations were proposed for two FRB host galaxies, we will follow up the first sub-arcsecond FRB localisation by MeerKAT, to study the HI content of its host galaxy and surrounding environment. This proposal will play to the strengths of MeerKAT in investigating the early trend in asymmetry tracing merger activity in FRB hosts, in the lead-up to a rapid increase in FRB localisations and host galaxy analysis.