

Proposal Abstract:

Fast Radio Bursts (FRBs) are a new class of radio transients and have become one of most popular astronomical research field currently. The discovery of the Galactic FRB implies that some of faint FRBs can originate from normal magnetars, however, the nature of cosmological FRBs is still mysterious. FRB repeaters exhibit plenty of complex but intriguing characteristics, which are of great use to study the emission mechanism and origin puzzles. Observationally, it is more economic and direct to obtain the FRB sample by tracking active repeaters using sensitive radio telescopes. Very recently, the Parkes ultrawideband observations depicted secular evolutions of repeating FRB 20180301A through a long-term monitoring program, which is shedding light on the enigmatic environment of FRB progenitor. Motivated by the new findings, we propose to observe FRB 20180301A using the Five-hundred-meter Aperture Spherical radio Telescope, synergistically with the Parkes and Green Bank Telescope. By monitoring the repeater regularly, we aim to reveal the secular trends of DM and RM completely, decipher the spectro-polarimetric properties, and investigate the cause of depolarization at different epochs.