

Technical Page

This proposal has not been submitted before.

Proposal Type: Regular
 General Category: Pulsars
 Observation Category:
 Total Time Requested: 35 Hours
 Minimum Useful Time: 45 minutes

Proposal Title: Multi-frequency scatter-broadening studies of high DM pulsars

ABSTRACT:

Pulsars show scatter broadening of their pulse profiles as a function of DM and observing frequency. This happens due to the passage of pulsar signals through fluctuations in the electron density in their line of sight. This will broaden a narrow pulse and show an exponentially reducing trailing edge component. The scattering also changes as a function of observing frequency. Studies of multi-frequency scatter-broadening of pulsars at high DM is only performed for 8 pulsars while about 250 pulsars are available above the DM of 500 pc/cc. Hence, increasing this population of multi-frequency measurements is a must in understanding the ISM properties of these lines of sight. In this proposed project, we aim to study the multi-wavelength scatter broadening properties of 28 high DM pulsars using the Arecibo Radio Telescope using the L-wide and S-low bands.

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Remote Observing Request

- Observer will travel to AO
- Remote Observing
- In Absentia (instructions to operator)

Instrument Setup

L-wide S-low

Atmospheric Observation Instruments:

Special Equipment or setup: none

RFI Considerations

Frequency Ranges Planned

1150 - 1730

1800 - 2600

This proposal requires coordination with Punta Salinas radar within the band 1222-1381 MHz..

This proposal requires coordination with GPS L3 at 1381 MHz.