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.

<table>
<thead>
<tr>
<th>Name</th>
<th>Institution</th>
<th>E-mail</th>
<th>Phone</th>
<th>Student</th>
</tr>
</thead>
<tbody>
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**Remote Observing Request**

- [ ] Observer will travel to AO
- [ ] Remote Observing
- [X] 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.