

## Technical Page

This proposal has not been submitted before.

Proposal Type: Regular  
 General Category: VLBI  
 Observation Category: Pulsars, ISM  
 Total Time Requested: 88 Hours  
 Minimum Useful Time: 2

**Proposal Title:** Monitoring of substructure in scattering disk of pulsar radio emission  
*ABSTRACT:*

This project is an extension of our AO-5 proposal. Its aim is to measure the properties of substructure that we have detected in scattering disks of radio pulsars, including its evolution in time. Our study exploits the microarcsecond angular resolution of space-ground VLBI, using the RadioAstron antenna in high Earth orbit, with the support of ground radio telescopes. We require large ground antennas (Arecibo and the GBT) to provide necessary sensitivity. Small telescopes will add an essential diversity of short baselines. Our target sources are 11 bright pulsars visible at the Arecibo radio telescope. The proposed observations will lead to better practical and theoretical understanding of the optics of scattering and the physics of the scattering material.

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### Remote Observing Request

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

### Instrument Setup

L-wide                      327

### Atmospheric Observation Instruments:

**Description of Observer Equipment:** N/A

**Special Equipment or setup:** Data to be transmitted via internet or on diskpack to ASC in Moscow; this is routinely used for Radioastron AGN VLBI observations at Arecibo. Correlation of data at the ASC correlator in Moscow. Backend should be configured for both L and P-band to be compatible with Radioastron: 2 x 16 MHz bands (USB, LSB), 2 bit quantization, two polarization channels (RCP, LCP), resulting bitrate 256 Mbps.

## **RFI Considerations**

## **Frequency Ranges Planned**

P-band: 0.31 - 0.34 MHz

L-band: 1652 - 1684 MHz