

Technical Page

Proposal Type: Regular
 General Category: Astronomy
 Sub-Category: Spectroscopy
 Observation Category: Extragalactic
 Total Time Requested: 18 Hours

Proposal Title: HI Absorption towards Compact Steep Spectrum Radio Sources

ABSTRACT:

Compact Steep Spectrum (CSS) sources are a subclass of FR II radio sources having both linear sizes of <20 kpc and steep high-frequency radio spectra. Observational evidence implies that these objects are young, and asymmetrically distributed gas is found close to their nuclei. Previous investigations have shown a high incidence of HI absorption from within their host galaxies against their continuum emission. The implied HI column densities are of the order of 10^{20} cm^{-2} . A few CSSs have also been detected in CO. These objects offer the potential for investigating atomic and molecular gas at different cosmological epochs. We propose observing 8 sources selected from well-defined CSS samples to improve on existing measurements and search for additional CSSs showing absorption. This study will help investigate the fueling of radio sources, and the estimation of column densities and temperatures for the gas in CSSs.

| Name | Institution | E-mail | Phone | Student |
|--------------|--------------------------------|-------------------------|---------------------|---------|
| S. Jeyakumar | Physikalisches Institut, Koeln | jeyaks@ph1.uni-koeln.de | 011 49 221 470 3485 | no |

Service Observing Request

- None
- All of the observing run.
- Part of the observing run.
- Queue Observing

Remote Observing Request

- No
- Maybe
- Yes

Instrument Setup

L-wide

Atmospheric Observation Instruments:

Special Equipment or setup: none

RFI Considerations

Frequency Ranges Planned

1088 - 1319 and 1276 - 1548

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

This proposal requires coordination with GPS L3 at 1381 MHz.