

## Technical Page

Proposal Type: Regular  
 General Category: Astronomy  
 Sub-Category: Spectroscopy  
 Observation Category: Extragalactic  
 Total Time Requested: 34 Hours  
 Minimum Useful Time: 1hour

**Proposal Title:** Determining star formation law in local galaxies with Arecibo

**ABSTRACT:**

We propose to observe HCCCN 1-0 and 4 hydrogen radio recombination lines (RRLs) with X band receiver at Arecibo toward a sample of 13 galaxies with a wide range of infrared luminosity to study star formation law in local galaxies. HCCCN 1-0 can trace dense molecular gas, while RRLs would be the tracer of star formation rate in these galaxies. The most advantage of using HCCCN 1-0 and RRLs to study star formation law is that they are observed at the same time, which provide to cover the same region in galaxies, even if those galaxies are more extended than one beam of Arecibo, and also avoids time dependent uncertainties of telescopes. It will be an ideal project for Arecibo to study star formation law.

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### Remote Observing Request

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

### Instrument Setup

X-high

#### Atmospheric Observation Instruments:

Spectrophotometer

**Special Equipment or setup:** none

### RFI Considerations

## Frequency Ranges Planned