

Technical Page

Proposal Type: Regular
 General Category: Astronomy
 Sub-Category: Spectroscopy
 Observation Category: Extragalactic
 Total Time Requested: 179.5 Hours
 Minimum Useful Time: 100 minutes

Proposal Title: Is the Gas-Richness Threshold Mass a Signature of Cold-Mode Accretion?

ABSTRACT:

Recent theoretical work suggests that “cold” ionized gas accretion may be the predominant fuel for galaxy growth in dark matter halos below a critical mass. The predicted critical mass is intriguingly similar to an observed “gas-richness threshold mass” below which gas-dominated galaxies become abruptly common, and the scatter in HI-to-stellar mass ratios sharply increases. To investigate the possible link between these scales, and more generally to enable diverse analyses requiring unbiased data on variations in HI content in relation to mass and environment, we propose to complete the HI inventory for the RESOLVE Survey, a volume-limited census of gas, stars, dark matter, star formation, and clustering for all ~ 1500 galaxies down to baryonic mass $\sim 10^9 M_{sun}$ within 53,000 cubic Mpc of the nearby cosmic web. The resulting public data set will build on the flux-limited ALFALFA Survey in two equatorial zones convenient for future ALMA studies.

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Remote Observing Request

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

Instrument Setup

L-wide

Atmospheric Observation Instruments:

Special Equipment or setup: none

RFI Considerations

Frequency Ranges Planned

1380-1405 MHz

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

This proposal requires coordination with GPS L3 at 1381 MHz.