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Title: Preliminary results on the Arecibo Pisces-Perseus Supercluster Survey

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Abstract

The Arecibo Pisces-Perseus Supercluster Survey (APPSS) aims to exploit the Baryonic Tully-Fisher Relation to derive distances and peculiar velocities of galaxies in and near the main ridge of the Pisces-Perseus Supercluster (PPS), one of the most prominent features of the Cosmic Web in the nearby Universe. The sample of galaxies contains ~ 600 sources in the low-mass range ($8 < \log M_{\text{HI}} / M_{\odot} < 9$). The source selection was based on the ALFALFA HI survey, SDSS and GALEX photometric data. The sample galaxies have HI masses just below the ALFALFA detection threshold, and were selected to be blue disk systems (low surface brightness sources from optical photometry data). The HI data were obtained at the Arecibo Observatory between the years 2015 and 2016. With this sample, the nature of the galaxy population in and around the PPS will be investigated. The HIMF to $\log M_{\text{HI}} \sim 8.0$ along the PPS filament will be measured and using the Tully-Fisher relation it will be possible to make a robust measurement of the infall and backflow onto the filamentary structure. APPSS is collaborative project between more than 10 Undergraduate ALFALFA Team institutions in which each group contributes to the analysis of a subset of the HI PPS data. In this poster, we will present the contributions of the U.P.R. team to the APPSS project. We will show the procedure used for the Arecibo HI data analysis, including some examples, and will show our preliminary results.

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