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Exploring the Environments of Fast Radio Bursts via Host Galaxy Characterization

This study aims to investigate the properties of host galaxies of Fast Radio Burst (FRB). We begin by extracting FRB event data from the Transient Name Server (TNS), using their sky positions (Right Ascension and Declination) and observed Dispersion Measures (DMs) to identify potential host galaxy candidates. By cross-matching with astronomical catalogs such as SDSS and Gaia, we filter out galaxies with redshifts and sky positions. Subsequently, we use the stellar population synthesis model Prospector to fit the photometric data of candidate host galaxies, deriving key physical parameters including stellar mass, star formation rate (SFR), dust extinction (A_v), and stellar population age. Through this multi-step approach, we aim to identify common characteristics among FRB host galaxies and provide observational insight into the environments where FRBs are most likely to originate.

Section

Galaxy/Extragalactic

Primary author: Mr WU, HaoMin (0900850119jk@gmail.com)

Presenter: Mr WU, HaoMin (0900850119jk@gmail.com)

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