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Abstract:

The HI content of galaxies in the local Universe is well studied due to the large samples provided by HIPASS and ALFALFA. However, due to the weakness of 21 cm emission line, large HI galaxies at z > 0.1 are challenging to investigate. Therefore the evolution of gas in galaxies remains uncertain. Based on 39 galaxies in the redshift range 0.17 < z < 0.25 from the HIGHz project, there is little apparent gas evolution. To better explore evolution trends at even higher redshifts (0.25 < z < 0.31), we propose 44.8 hours of FAST observing time to search for HI content in ten optically-selected galaxies. We will derive and compare their gas fraction and baryonic Tully-Fisher relations with counterparts in the local Universe, giving a better insight into gas evolution across cosmic time.