

FAST Proposal Coverpage

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Project Name:

(A 1-line title for your project)

Baryonic Tully Fisher relation for dwarf galaxies and the environmental dependence

Project Summary:

The baryonic Tully-Fisher relation (BTFR) serves as a standard ruler for cosmological distance estimation and is found to be surprisingly tight. But the low-mass end of the BTFR shows discrepancies between observation and numerical simulations. One interpretation is environmental effects, however, a large sample of dwarf galaxies with HI observations is needed for further theoretical interpretations. We propose to use FAST to observe 12 dwarf galaxies selected with different environments. We aim to push the HI mass limit down to $\sim 10^6 M_{\text{sun}}$. This could help to understand the BTFR at the low mass end and their environmental effects.