

Proposal Abstract:

The study selected five millisecond pulsars (J0023+0923, J0034-0534, J1012+5307, J1640+2224, and J1857+0943) for high-resolution dynamic spectral analysis to estimate scintillation parameters (decorrelation bandwidth, diffractive timescale, and drift rate), explore the frequency dependence of electron density fluctuations, and analyze the parabolic arcs in secondary spectra to estimate the location of scattering screens. Through FAST's high-sensitivity observations, more accurate scintillation parameters and scattering screen properties will be obtained, constraining pulsar orbits, improving pulsar timing precision, and supporting gravitational wave detection.