

**Proposal Abstract:**

Discovering new pulsars, especially binary and millisecond pulsars (MSPs), is one of the primary objectives in pulsar astronomy, and the Five-hundred-meter Aperture Spherical Telescope (FAST) presents a remarkable opportunity to accomplish this goal. The Galactic plane region has traditionally been the primary target of large-scale pulsar surveys due to its high pulsar density. However, selection effects in this area make it more challenging to detect MSPs, resulting in a lower discovery rate than in high-latitude regions. Therefore, we propose to conduct a pilot pulsar survey of the high Galactic latitude region which is more favorable as it will be relatively free from selection effects that can impede survey sensitivity to detect MSPs near the Galactic plane. In this pilot survey of a small patch of the high Galactic latitude region we expect to find 17-26 pulsars among which 30% of the pulsars should be MSPs. The new MSP discoveries from this survey will be beneficial for pulsar timing arrays. Also, using various computationally demanding sensitive search algorithms to detect exotic pulsars, we will be able to exploit its full sensitivity which would be extremely helpful for the future large-scale survey strategies of the high-latitude region with FAST.