Proposal Abstract:

Pulsar timing is an important technique that can be used to measure the properties of pulsars with high precision. Timing analysis of pulsars in globular clusters (GCs) can also lead to understanding of cluster properties in great detail. In our previous work, we have discovered a pulsar (M13F) in the GC M13 and established coherent timing solutions of all the known pulsars in M13 with FAST data. We also measured some of the post-Keplerian parameters of pulsars in M13 tentatively and RMs of all the six pulsars. We propose FAST observations to continue the pulsar timing and searching campaign and expect to discover more pulsars in M13, measure and improve the precision of post-Keplerian parameters, so as to constrain pulsar masses in M13. We will also map the galactic magnetic field along light of sight in small-scale structure using the pulsars in M13 and explore the gravitational potential and gas distribution of M13.