

Proposal Abstract:

Spider pulsars are characterized by a low-mass companion star and a millisecond pulsar (MSP) in a compact orbit of less than 1 day. A total of 9 spider pulsars were discovered in eight Globular Clusters (GC) within FAST sky. Long-term monitoring of spider pulsars in GCs can help to understand their evolution mechanism and reveal the details of the medium in clusters. We propose FAST for long-term monitoring of spider pulsars in M92 (NGC 6341), NGC 6712, M13, M5 (NGC 5904) and NGC 6760. NGC 6712A and M92A were discovered by FAST, and they are black widow, eclipsing redback system respectively. Further observations of M13E are highly likely to result in mass measurement of this pulsar. While monitoring M5C, we can also obtain timing solutions for the other four pulsars in this cluster. The timing of the NGC 6760A has not been updated since 2005, and the current archival data is not enough to obtain its phase-connected timing solution. More details of spider pulsars in GCs are expected from the monitoring with the high sensitivity of FAST.