Proposal Abstract:

Spider pulsar is the descendant of low-mass X-ray binary after the accretion process on to the pulsar has ceased. The high energy emissions or energetic particles of the spider pulsars irradiate the companions, which results in the mass losses of the companions. Radio observations of the eclipses in spider pulsars is the key for understanding the properties of the medium causing the eclipses, interactions between the pulsar wind and the eclipse medium, and the binary evolution. In this proposal, we aim to study spider pulsars using FAST. We will obtain the polarization properties near the eclipses in more details and expect to expose the eclipse mechanism. The highly sensitivity observations allow us to measure the binary parameters, such as the mass loss rate and magnetic filed of the companion, and provide more restrictions on the formation and evolution of spider pulsars. We also search radio emissions in spider pulsar candidates and expect to expend the sample of transitional millisecond pulsars.