Proposal Abstract:

Magnetar and Central Compact Objects (CCOs) are two peculiar subgroups of pulsars, showing diverse activities in high-energy bands. The absence of radio pulsations at their quiescent state has confused astronomers to figure out the radiation mechanism and the geometry of their radiation region for the past decades. So far, almost all the magnetars and CCOs have been discovered from the high energy observations, while the most traditional pulsars were detected from the radio pulsations. We have proposed a series of tracking observations since the 'share-risk' proposal phase. An article has been published to report the most stringent upper limit of radio flux density of both periodic signals and single pulse for a CCO and three magnetars using preorder observations. To investigate all the CCOs and magnetars in the entire FAST coverage and exclude the effect of interstellar scintillation, we propose a series of continuous repeat pulsation searches of a CCO and six magnetars, aiming to detect the faint pulsations using the most sensitive single dish telescope FAST. If not detected, we will also obtain the most stringent upper limit of the radio flux for these two subgroups of pulsars, broadening our understandings of neutron stars.