

Proposal Abstract:

The discovery of gamma-ray pulsars has provided a wealth of new information on pulsar emissions. With the increasing number of gamma-ray pulsars, a new class, the radio-quiet gamma-ray pulsar, has been discovered unexpectedly. It remains unclear whether the radio-quiet pulsar lacks radio emission entirely or if the radio emission is too weak to be detected. With its extremely high sensitivity, FAST is an ideal facility for searching for faint radio emissions in pulsars. We have detected very weak radio pulse emissions from a radio-quiet gamma-ray pulsar, J1813-1246, with a radio flux density of approximately $10 \mu\text{Jy}$ using FAST. Therefore, we propose to search for radio emissions from more radio-quiet gamma-ray pulsars using FAST. If radio emissions are detected, we will update the percentage of radio-quiet/radio-loud gamma-ray pulsars, providing new constraints on pulsar emission models. If no radio emissions are detected, we will obtain the most stringent upper limit on the radio flux density of radio-quiet gamma-ray pulsars at 1250 MHz to date. Our observations will play an important role in understanding radio-quiet gamma-ray pulsars.