

FAST Proposal CoverPage

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Project Name:

Multi-wavelength observations of PSR J0318+0253, the first MSP discovered by FAST

Project Summary:

PSR J0318+0253 is the first millisecond pulsar (MSP) discovered by FAST. Coincident with the Fermi-LAT unassociated gamma-ray source 3FGL J0318.1+0252, it was later confirmed by the Fermi-LAT team with the detection of gamma-ray pulsations. We propose to perform FAST tracking observations toward PSR J0318+0253 in the commissioning phase to achieve a high signal-to-noise ratio radio pulse profile. Our goal is to constrain and reveal the emission geometries and spin evolution of PSR J0318+0253 by comparing the radio and gamma-ray pulse profiles. The proposed data here will significantly improve the scientific value of this discovery and can be published immediately after reduction along with the discovery paper, already under internal review by the collaboration.