

FAST Proposal Coverpage

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Project Name:

Searching for Pulsars in Globular Clusters with FAST

Project Summary:

Globular clusters (GCs) provide a unique environment for stellar collision and interactions, which leads to a high probability of finding millisecond pulsars (MSPs) and perhaps even the as yet un-discovered sub-MSPs. They might also result in exotic systems such as triples and the also yet to be discovered pulsar-black hole binaries. These system are ideal laboratories to test theories of dynamics, formation, equations of state and theories gravity. Considering the high sensitivity and large sky coverage, FAST is the most powerful telescope for targeted searches for pulsars. What's more, targeted searching is also more efficient than all sky survey with FAST. We propose to undertake a targeted survey of GCs, especially those located out of the sky coverage of Arecibo, for new pulsars using the central beam of the 19-beam receiver.