

# FAST Proposal Cover Page

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## **Project Name:**

*Searching for repeating bursts from CHIME repeating FRBs with FAST*

## **Project Summary:**

*At least some fast radio bursts (FRBs) are known to repeat. The first repeater (FRB 121102 or 'R1') was discovered using the Arecibo telescope in 2016. CHIME recently published the discovery of the second repeater (FRB 180814.J0422+73, or 'R2'). At the latest FRB meeting in Amsterdam, the CHIME team announced the discovery of additional five repeaters (R3-R7). Important scientific questions regarding FRBs include 1. Whether all FRB sources repeat; 2. How often do the repeaters repeat; and 3. Whether repeaters all have high rotation measures (RMs) similar to R1. FAST, with its superb sensitivity, is well suited to follow up CHIME repeating sources to detect faint bursts from them, and the RMs of the sources can be directly measured from these observations. The detections will also help to constrain the luminosity function of repeating FRBs. All these will help to address the above-mentioned three important questions in the FRB research field. We propose to collaborate with the CHIME team to observe two repeating FRBs with DEC < 66°, each with 15 hours, aiming at detecting faint bursts from these sources, measuring RMs of these sources and constraining the luminosity function of repeating FRBs.*