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Proposal Abstract:

Magnetars are a class of young neutron stars that possess ultra-strong magnetic fields. In contrast to rotation-powered pulsars, magnetar emission is thought to be powered by their decaying magnetic fields. The radio pulse of magnetars exhibit strong temporal variability in the detected radio flux, polarization fraction and pulse-profile shape, and extraordinary spectral phenomenology. However, due to the lack of rich radio observations of magnetars, the processes responsible for these behaviors remain a mystery. We propose to use the FAST telescope for long-term monitoring of magnetars to collect more radio pulse data and determine the radio emission mechanism of magnetars.