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Abstract:

Short, hard X-ray bursts are a distinguishable character of magnetars. A strict upper limit of the pulsed radio flux was placed to radio counterparts of these typical X-ray events by FAST. However, a magnetar X-ray burst with an untypical spectrum was discovered to be associated with the Galactic FRB (FRB 200428). In order to understand the relation between radio and X-ray bursts from magnetars, we need to collect more bursts simultaneously observed in radio and X-rays. Therefore, we propose a multi-wavelength follow up program using FAST to observe magnetars or other sources (which emitted magnetar-like bursts) during their burst active episodes. This campaign will provide a valuable burst sample to study the trigger process and emission mechanisms of both magnetar-like X-ray bursts and radio bursts/pulses.