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Abstract:

Motivated by the association of the Galactic FRB200428 and X-ray burst with the magnetar SGR J1935+2154, we propose a monitoring program of joint FAST and Insight-HXMT observations for four canonical high-B pulsars and magnetars, i.e., PSR J1852+0040, 3XMM J1852+0033, SGR 0418+5729 and PSR J1846-0258. We request 12×0.5 hours observational time for each source, for a total of 24 hours for the entire project. This multi-wavelength campaign will not only have the potential possibility for detecting radio/X-ray counterparts of the latent high-B pulsars and magnetars, but will also greatly improve our understanding of the radiation mechanisms at play, and shed light on the similarities and differences between X-ray and radio band properties of these sources. The FAST L-band system provides a unique capability for studying faint radio counterparts with wide bandwidth, in terms of both the sensitivity and frequency-dependent observing properties. Even non-detection could improve the scientific value of these special sources.