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Abstract:

Polarization properties in repeating fast radio bursts (FRB) show that the FRBs are in highly magnetized environments. For about 50 unique progenitor theories have been proposed to explain the FRB origins. Recently, some reports describe the periodic behaviors of repeaters in the framework of a magnetar orbiting a massive main-sequence star (MS star) (Wang et al. 2022; Dai et al. 2022). However, it's difficult to take a look at repeaters' local environment, because of the cosmological distance of repeaters. We propose observing the similar Milky Way pulsar-Be star systems, PSR J2032+4127/MT91 213, to help us understand the complex performance of FRBs' dispersion-measure (DM) and the Faraday rotation measure (RM) variation. Here, we propose applying for 7 hours to this interesting pulsar-MS star system.