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Fast Radio Bursts and the Milky Way NAYAB GOHAR, Government College University, Lahore, CHRIS FLYNN, Swinburne University of Technology —
Fast Radio Bursts (FRBs) are highly energetic transient events, with durations of order of microseconds to milliseconds, recently shown to lie at cosmological distances. Recently, an FRB-like event was seen from the Milky Way magnetar SGR 1935+2154 by CHIME and STARE2, radio telescopes that have ongoing FRB search programs. Finding further events like that from SGR1935+2154 from other magnetars in the Milky Way will be strongly affected by the turbulent interstellar medium, their intrinsic energy distribution and to some extent their spatial locations within the plane of the Milky Way disk. Here, we examine searches for more such FRB-like events, using two models for the distribution of electrons in the ISM in order to estimate the dispersion measure and pulse scattering of mock events, and a range of models for the spatial distribution and luminosity functions, evaluating what fraction of FRB-like events in the Milky Way could be detected by all-sky experiments such as STARE2. In all the models examined, only a fraction of burst events is detectable, mainly due to the scattering effects of the ISM. A similar experiment to STARE2, operating in the Southern Hemisphere, could increase the detection rate significantly.

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