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AGILE observations of a sample of repeating Fast Radio Burst sources

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We report on a comprehensive search for X-ray and Gamma-ray counterparts to a selected sample of repeating FRBs using AGILE data. Focusing on events with an excess dispersion measure below 300 pc cm^{-3}, our high-resolution analysis with the AGILE MiniCalorimiter (MCAL) did not reveal any significant X-ray emission, enabling us to set robust upper limits on the flux above 400 keV within a spectral magnetar model framework. We derived also flux upper limits in the 18–60 keV band using SuperAGILE data archive, and we examined GRID coverage in the 0.03–10 GeV range on timescales from 10 to 10^3 s as well as over AGILE's 17-year archival data. Using the well-known FRB 200428 as a benchmark, we extrapolated expected X-ray emissions from the sample of repeating FRBs and compared these with rescaled historical magnetar bursts. Our findings place significant constraints on the magnetar model for FRB emission, with MCAL limits representing the most stringent constraints in the 0.4–30 MeV range. We will discuss the methodology, challenges, and implications of these results for future high-energy FRB studies.

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