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AGILE activity on FRB high-energy counterparts search

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Since 2019, the AGILE satellite has been involved in searches for high-energy counterparts to Fast Radio Bursts (FRBs) following the discovery of Repeating-FRBs (R-FRBs) with low excess Dispersion Measure (DM_{EXC}) by the CHIME/FRB instrument. These R-FRBs are closer than the average sample of FRBs detected at higher DM values. A new pipeline was developed to perform archival searches in the MCAL and GRID detector data for triggered transient sources.

Firstly, we targeted possible emissions for two nearby FRBs, FRB20180916B and FRB20181030A. After discovering its periodic "activity" phases of ~16 days, a multi-wavelength (MW) campaign on FRB20180916B was set up, involving Italian radio telescopes (mainly the Northern Cross) and the Swift mission. Although no detections were made in AGILE or Swift data, constraints on potential gamma-ray emissions for a magnetar model were established, excluding giant flares like the 2005 event from SGR 1806-20.

The 2020 discovery of a millisecond radio burst from SGR 1935+2154, simultaneous with a weak X-ray burst also detected by AGILE, was interpreted as possible confirmation of the magnetar model for at least a subclass of FRBs through a comparison with the X-ray campaign on FRB20180916B. AGILE results are discussed within the MW collaboration, both in the specific FRB20180916B source paper and in a general study of all known sources in 2021. We will describe current AGILE FRB post-operations activities and the most recent MW campaigns.

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