



On the high-energy spectral component of TGFs detected by AGILE

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We follow up on the latest results presented on TGFs with high-energy counts (>30 MeV) detected by the MCAL instrument onboard the AGILE satellite. The motivation is to provide a reliable assessment of the high-energy spectral component of TGFs, when energy calibration and instrumental effects such as dead time and pile-up are properly accounted for. We consider a dataset of 85 confirmed TGFs with simultaneous WWLLN association detected in the period March - June 2015, providing a sample of events unbiased by any additional selection criteria. Twenty events in this sample include at least one count with reconstructed energy larger than 30 MeV, with few photons with energy apparently above 100 MeV. We show that most of the counts with measured energy exceeding 40 MeV are compatible with pile-up of lower energy photons. However, the topology of the interactions in the detector active volume suggests that a likely scenario for the interpretation of these counts is the simultaneous interaction (within few microseconds) of a small number of photons with energies in the several tens-of-MeV range, rather than a large number of \sim MeV photons.