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High Energy flares of FSRQs

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High-Energy gamma-ray flares (E>10 GeV) of Flat Spectrum Radio Quasars (FSRQ) give us strong constraints of jet-physics, and of the surrounding-medium.
We performed the first study of these flares, examining FERMI-LAT archival-data, and triggering ∼40 ToO-observations from near-ir to TeV (e.g., for PKS 1441+25),
at the occurrence of new flares.
We identified ∼260 gamma-ray flares. Among these, we investigated peculiar and short-flares of 3C454.3 and CTA102, showing remarkably hard gamma-ray spectra.
We show here the study of a sample of 12 FSRQs, and we discuss the broad-band spectra, and variability-timescales in terms of injection and cooling of energetic-particles, arguing that these flares originate at parsec distance from the Supermassive Black-Hole, powered by magnetic-reconnections or turbulence in the flow.
For the whole sample of 260 flares, we will show spectral and temporal properties, and the correlation with disk luminosity during flares.
emphasized text

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