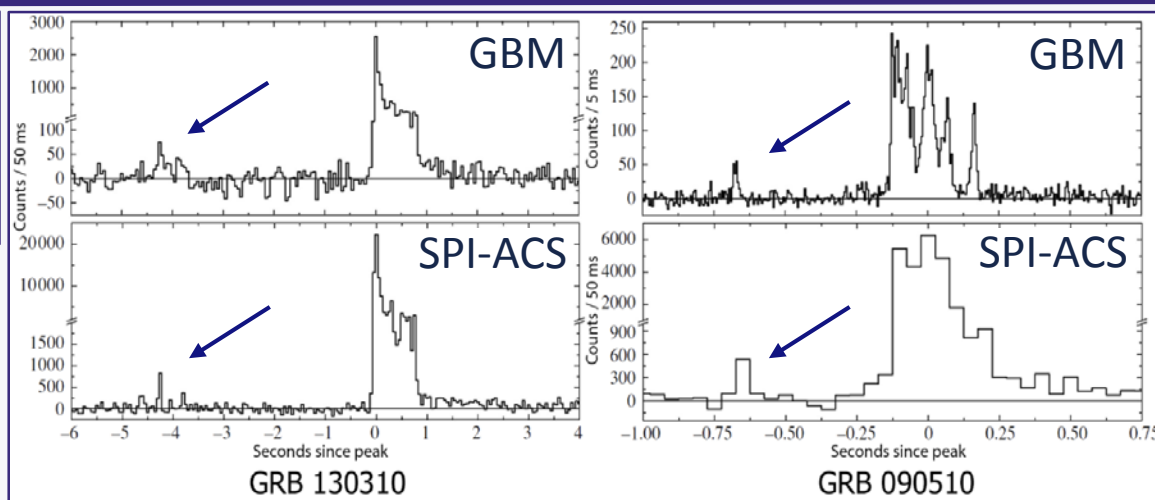


# S11.7

# Precursors of short GRBs in the SPI-ACS/INTEGRAL experiment

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- Light curves of **519 short GRBs** registered by SPI-ACS in **2002 – 2014** were analyzed.



- Precursor candidates for **GRB071030, GRB090510, GRB100717, GRB130310** were found and analyzed in details.

- The **nature** of these candidates remains **unclear**. If we suggest them as “real” precursors, the **portion** of short bursts with precursor activity will be less than **0.4%**.

- Any statistically significant **regular precursor** in averaged light curve of 372 bright bursts was **not found**. Possible regular precursor is weaker than GRB main phase of the burst more than 30 times.

**P. Minaev, A. Pozanenko, Astronomy Letters, 43, 1, 2017. arXiv:1612.02418**