

# A compact low threshold gamma-ray detector composed of LaBr<sub>3</sub> and SiPMs for GECAM

*Thursday, 28 May 2020 14:18 (18 minutes)*

The Gravitational wave high-energy Electromagnetic Counterparts All-sky Monitor (GECAM) project is the planned China's space telescopes launched in 2020 for searching gamma-rays from gravitational wave events such as double neutron stars merging. GECAM features instantaneous full-sky monitor with two micro-satellites, which can be achieved with relatively short time and small cost based on China's space technology. A compact low threshold gamma-ray detector composed of LaBr<sub>3</sub> crystals and Silicon Photomultipliers (SiPMs) was successfully developed, which energy threshold, size, and power consumption can meet the requirements of GECAM. A prototype,  $\varnothing 76 \times 15$  mm LaBr<sub>3</sub> crystal coupled with SiPMs array, has been built and tested. The experiment results show, low-energy 5.9 keV X-ray can be clearly seen at the energy spectrum with a detection efficiency 72%, the energy resolution is 6.5% (FWHM) at 662 keV and the read out method is simple with only one parallel channel.

## Funding information

**Primary author:** SUN, Xilei (IHEP)

**Session Classification:** Experiments: Space and particle astrophysics

**Track Classification:** Experiments: Space and particle astrophysics