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The characteristics of fast scintillation detectors of time of flight and anticoincidence system of space-based gamma-ray telescope GAMMA-400 with silicon photomultipliers readout

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Scientific project GAMMA-400 relates to the new generation of space observatories intended to perform a search for signatures of dark matter in the cosmic gamma emission, measurements of characteristics of diffuse gamma-ray emission and gamma-rays from the Sun during periods of solar activity, gamma-ray bursts, extended and point gamma-ray sources, electron/positron and cosmic-ray nuclei fluxes up to TeV energy region by means of GAMMA-400 space-based gamma-ray telescope represents the core of the scientific complex. The main results obtained using ~ 300 MeV positron beam of synchrotron C 25P "PAKHRA" of Lebedev Physical Institute with prototypes of time of flight and anticoincidence system of gamma-ray telescope are presented. The amplitude resolution, time resolution and charged particles detection efficiency are adduced. The comparison of using both «slow» and «fast» outputs of silicon photomultipliers of prototype scintillation detectors sensors is featured.

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