

The structure, logic of operation and distinctive features of the system of triggers and counting signals formation for gamma-telescope GAMMA-400

Thursday, 13 October 2016 17:15 (15)

Scientific project GAMMA-400 (Gamma-Astronomy Multifunction Modules Apparatus) relates to the new generation of space observatories for investigation of cosmic gamma-emission in the energy band from ~ 20 MeV up to several TeV, electron/positron fluxes from ~ 1 GeV up to ~ 10 TeV and cosmic-ray nuclei fluxes with energies up to $\sim 10^{15}$ eV in the main aperture by means of GAMMA-400 gamma-telescope represents the core of the scientific complex. For gamma-rays in the energy region from 10 to 100 GeV expected energy resolution changes from $\sim 2\%$ to $\sim 1\%$ and angular resolution from $\sim 0.1\%$ to $\sim 0.01\%$ respectively, electron/protons rejection factor is $\sim 5 \cdot 10^5$. The GAMMA-400 satellite will be launched on the high apogee orbit with following initial parameters: apogee altitude ~ 300000 km, perigee altitude ~ 500 km, rotation period ~ 7 days, inclination to the equator plane $\sim 51^\circ$. The active functioning interval will be 5-10 years. The system of triggers and counting signals formation represents the electronic system consists of control and interface unit, set of program controlled digital delay lines, counters and units for master triggers signals formation from any combination of input digital and analogue pulses from detecting subsystems of gamma-telescope. The structure, logic of operation and distinctive features of the system are presented.

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Session Classification : Cosmic rays - parallel VI

Track Classification : Cosmic rays