

SiPM based gamma camera prototypes investigation.

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The utilization of silicon photomultipliers (SiPM) in the detection module opens up a new possibilities of using a gamma camera. Two prototypes of gamma camera were developed. In the first prototype takes place a direct reading of monolithic scintillator NaI(Tl) using SiPM matrix and signal digitizing from this matrix utilizing a multichannel ASIC Maroc 3. In the second prototype between the scintillator NaI(Tl) and silicon photodetectors orthogonally related wavelength shifting fibers (WLS) are placed reducing the number of photodetectors.

Study of prototypes is required for calibration of simulation programs which allow to estimate expected spatial and energy gamma-camera resolution. Dark rate, crosstalk, afterpulsing give rise of noise-factor which violates initial photostatistics. Thus correct estimation of initial photons produced by gammas is a key question for carrying out of simulation.

Presentation type

Section talk (10+5 min)

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