Computer simulation of object image formation at real time for PET - measures system.


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In this work we consider an approach to formation of images of studied object in the real time of data acquisition taken in the course of positron-emission tomography inspection.

The method assumes selection of some flat fantom object having arbitrary shape. Then, on the basis of the proposed processing of each trajectory (of annihilation γ-quanta, counted in coincidence) with following reading it in computers memory, the working space of tomographe is formed with the active centers, reproducing the fantom-object.

For given coordinate system the algorithm for separating the detectors, determining the trajectories of annihilation γ-quanta with extraction of the corresponding cells on this trajectory was developed.

Using Fortran-32 on IBM-486 a computer program SCANNER was elaborated for the data processing, which allows to fulfill a large number of model calculations.

The obtained images have a good correspondence to respectively different initial fantom-objects.

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