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Аннотация. Â ñòàòüå ïðîâåäåí àíàëèç ñóùåñòâóþùèõ ïîäõîäîâ ê ìîäåëèðîâàíèþ àïïàðàòóðíûõ ãàììà-ñïåêòðîâ. Âûÿâëåíû èõ äîñòîèíñòâà è íåäîñòàòêè. Ðàçðàáîòàí àëãîðèòì ìîäåëèðîâàíèÿ ãàììà-ñïåêòðîâ ñ ïîìîùüþ ìàêðîïîäõîäà. Ðàçðàáîòàíà ìåòîäèêà ìîäåëèðîâàíèÿ êîìïòîí-ðàñïðåäåëåíèÿ ñ èñïîëüçîâàíèåì òåîðèè Êëåéíà-Íèøèíû-Òàììà, ïðîâåäåí ðàñ÷¸ò ðàñïðåäåëåíèÿ îáðàòíîãî ðàññåèâàíèÿ, ïàðíûõ è ïîëóïàðíûõ ïèêîâ îò ýôôåêòà îáðàçîâàíèÿ ïàð.

Êëþ÷åâûå ñëîâà: ãàììà-ñïåêòðîìåòðèÿ, àïïàðàòóðíûå ãàììà-ñïåêòðû, ìîäåëèðîâàíèå.

**Simulation Apparatus Gamma Spectrum of Scintillation Detectors by Using Macro Approach**

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Abstract. In article analysis was conducted of existing approaches to modeling instrumental gamma spectra. Their advantages and disadvantages were identified. Simulation algorithm gamma-ray spectra by using the macro approach have been developed. Simulation method of Compton distribution by using the theory of Klein-Nishina-Tamm, of peak backscatter and of paired and semi paired peaks by the effect of pair formation was developed.

Key words: gamma-spectrometry, the instrumental gamma spectra, modeling.