

14. ON THE DIRECT MEASUREMENT METHOD OF THE CAPTURE NEUTRON CROSS SECTION BY RADIOACTIVE NUCLEI

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Application possibility of multiplicity spectrometry for the measurement of direct capture neutron cross section by radioactive samples is considered. For the γ -rays cascade registration on their space distribution in the multisection 4π -detector condition is introduced. It can be seen from calculation results of this condition with combination conditions of coincidence γ -rays cascade in definite time interval and determined energy release in the detector sections which will lead to significant radiation background decrease from research sample radioactive radiation and it influence on registration system. Expected sensitivity for sample minimum quantity under cross section measurement on level 50 b consists $\sim 0,2$ mg and sample specific activity $\sim 2 \cdot 10^{10} \text{Bk} \cdot \text{g}^{-1}$.