

ENERGY DEPENDENCE OF TOTAL REACTION CROSS SECTIONS FOR ISOTOPES OF Be ON TARGETS ^{28}Si , ^{59}Co , ^{181}Ta

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Energy dependence of the total cross sections $\sigma_R(E)$ for reactions $^{10,11,12}\text{Be} + ^{28}\text{Si}$, ^{59}Co , ^{181}Ta are presented. The 4π -methods of σ_R measurements are based on registration of prompt γ -quanta and neutrons using a 12-module 4π -spectrometer [1]. The results of the two methods for calculating the total reaction cross sections are presented.

The values of σ_R were calculated taking into account:

1. the mean detection efficiency $\langle \epsilon \rangle$ of the 4π -spectrometer, which does not depend on γ -multiplicity M_γ [2];
2. the distribution of the numbers of triggered detectors during registration of the cascades of particles at a fixed value of multiplicity M_γ .

Measurement of the detection efficiency $\epsilon(M_\gamma)$ for various values of γ -multiplicity M_γ was carried out using the method described in [3].

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2. Yu.E. Penionzhkevich, Yu.G. Sobolev, V.V. Samarin, and M.A. Naumenko, Phys. Atom. Nucl. 80, 928 (2017).
3. Yu.E. Penionzhkevich, Yu.G. Sobolev, V.V. Samarin, M.A. Naumenko, N.A. Lashmanov, V.A. Maslov, I. Siváček, and S.S. Stukalov, Phys. Rev. C 99, 014609 (2019).

The speaker is a student or young scientist

Yes

Section

1. Experimental and theoretical studies of nuclear reactions

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