ENERGY DEPENDENCE OF TOTAL REACTION CROSS SECTIONS FOR ^{6,8}He, ^{8,9}Li BEAM PARTICLES ON ^{28}Si, ^{59}Co, ^{181}Ta TARGETS

Sobolev Yu.G.[1,2], Penionzhkevich Yu.E.[1,3], Samarin V.V.[1,4], Kugler A.[5], Louko J.[6], Naumenko M.A.[1], Siváček I.[1,5], Stukalov S.S.[1]

[1] JINR, Joint Institute for Nuclear Research, 141980, Dubna, Russia; [2] National Research Center "Kurchatov Institute" Moscow, 123182, Russia; [3] MEPhI, National Research NuclearUniversity,115409, Moscow, Russia; [4] Dubna State University, Dubna, Russia; [5] NPI ASCR, Nuclear Physics Institute, CZ 250 68, Řež, Czech Republic; [6] Department of Physics, P.O. Box 35 (YFL) FI-40014 University of Jyvaskyla, Finland

E-mail: sobolev@jinr.ru

New experimental data of direct measurement of total reaction cross section values for interaction ^{6,8}He, ^{8,9}Li cocktail beam particles with ^{28}Si, ^{59}Co, ^{181}Ta target nuclei in the energy range 15–40 A MeV are presented. Modified transmission method based on prompt *n,* γ radiation detection by multi-module γ-spectrometer [1] was used. In this work 12 module CsI(Tl) high efficiency γ-spectrometer has been applied. Presented data for ^{6,8}He + ^{28}Si and ^{9}Li + ^{28}Si reactions, in the frame of the experimental uncertainties, are overlapping with previously published results obtained by other transmission methods [2]. It confirms the observation of the peculiarity of cross section "bump" in $\sigma_R(E)$ for ^{6,8}He + ^{28}Si and ^{9}Li + ^{28}Si reactions at $E \sim 10$–30 A MeV [3,4]. Theoretical analysis of presented experimental data was carried out in the microscopic model based on a numerical solving of the time-dependent Schrödinger equation for the outer weakly bound neutrons of the projectile nucleus [5].

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