^{9}Be(^{11}B,^{12}C)^{8}Li REACTION MECHANISM

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Angular distributions of the ^{9}Be(^{11}B, ^{12}C)^{8}Li reaction were measured (Warsaw cyclotron C-200) at E_{lab}(^{11}B)= 45 MeV for the transitions to the ground and excited states of ^{12}C and ^{8}Li.

The data were analysed by the coupled-reaction-channel method [1]. The elastic and inelastic scattering of ^{9}Be + ^{11}B and one- and two-step transfers were included in the channel coupling scheme. The optical model (OM) potentials of Woods-Saxon type with volume absorption were used for both entrance and exit reaction channels. The OM parameters obtained from the ^{9}Be + ^{11}B elastic scattering data at different energies were taken from Ref. [2] for the entrance reaction channel.

It was found that the proton transfer dominates in the ^{9}Be(^{11}B,^{12}C)^{8}Li reaction. The ^{3}He-transfer (curve <^{3}He> in Fig. 1) and two-step transfers are rather negligible. The ^{12}C + ^{8}Li OM parameters were deduced.

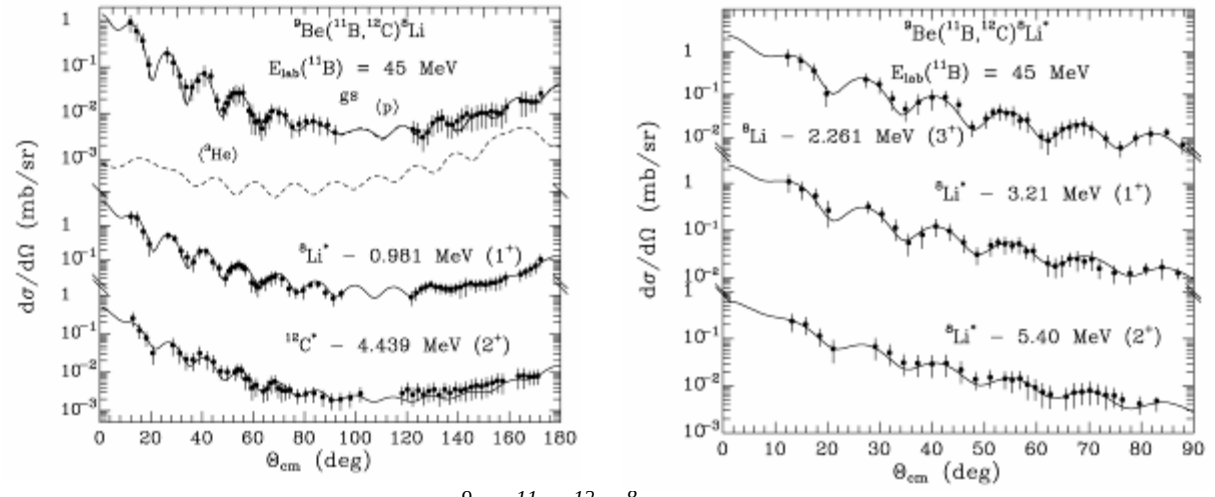

Fig. 1. Angular distributions of the ^{9}Be(^{11}B, ^{12}C)^{8}Li reaction for transitions to the ground and excited states of ^{12}C and ^{8}Li.

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