

# Decay branching ratio of main and excited states of $^{11}\text{B}$ nucleus produced by neutron from 1 to 6 MeV

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Decay branching ratio of main and excited state of  $^{11}\text{B}$  in the interaction of neutron and  $^{10}\text{B}$  in energy between 1 and 6 MeV is studied. The experiment is performed at the photoneutron source of the Institute for Nuclear Research of Russian Academy of Sciences. Neutron detector based on the  $^{10}\text{B}$ -layer which served as both target and cathode of wire chamber for detecting secondary nucleus ionization losses is used [1]. Trigger of neutron lower than 0.5 MeV energy is suppressed by both cadmium filter and high threshold setting. Branching ratio of  $n + ^{11}\text{B} \rightarrow ^7\text{Li} + ^4\text{He}$  and  $n + ^{11}\text{B} \rightarrow ^7\text{Li} + ^4\text{He} + \gamma$  reactions is determined using pulse height spectra and correlation from two detector gap signals together with  $^7\text{Li}$  and  $^4\text{He}$  ionization loss simulation taking into account kinematics of each reaction.

1. S. Potashev, A. Drachev, Yu. Burmistrov, S. Karaevsky, A. Kasparov, V. Ponomarev, and G. Solodukhov. Hybrid boron-10 gaseous detector for slow and fast neutron simultaneous detection. EPJ Web of Conferences V.231, P.05010 (2020).

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