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Theoretical Analysis of Neutron Double-Differential Cross Section of $n+^{11}B$ at 14.2 MeV

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Abstract: A new reaction model for light nuclei is proposed to analyze the measured data, especially for the double-differential cross sections. In this paper the calculation with this model is employed to analyze measurements of the total outgoing neutron double-differential cross sections for $n+^{11}B$ reactions at E_n=14.2 MeV. The representation of the double-differential cross sections of the second emitted particles is given in detail. The calculation results indicate that the recoil effect in light nuclear reaction is essentially important. The reaction channels are discussed in detail.

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Key words: light nucleus reaction, double-differential cross section

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