

THEORETICAL STUDY OF THE TRANSFER REACTIONS IN THE D + D SYSTEM

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In this work, the $D(d, p)T$ and $D(d, n)^3\text{He}$ transfer reactions are studied by means of the microscopic multi-channel cluster approach in the oscillator representation [1–3]. These reactions are of great interest for pure and applied physics. Their total and partial astrophysical S factors are calculated. The contributions of the different channels are discussed, the most important ones are carefully analysed. Manifestations of the nuclear tensor force in dynamics of the studied transfer processes are considered. A comparison of the obtained results with available experimental data demonstrates a good agreement.

1. A. S. Solovyev, Phys. Rev. C **106**, 014610 (2022).
2. A. S. Solovyev, Phys. At. Nucl. **86**, 24 (2023).
3. A. S. Solovyev, Eur. Phys. J. A **60**, 32 (2024).

Section

Experimental and theoretical studies of nuclear reactions

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