

RADIATIVE CAPTURE IN THE ${}^4\text{He} + {}^2\text{H}$ SYSTEM IN THE FRAMEWORK OF A MICROSCOPIC APPROACH

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The ${}^4\text{He} + {}^2\text{H}$ system is of great importance for nuclear astrophysics because the radiative capture proceeding in this system is responsible for production of the ${}^6\text{Li}$ nuclei during the primordial nucleosynthesis. In this work, the ${}^4\text{He} + {}^2\text{H}$ radiative capture reaction is considered from the microscopic viewpoint within a developed approach [1, 2] based on clustering aspects of nuclear structure and dynamics and formalism of expansions over the oscillator basis. The cross section of the reaction in terms of the astrophysical S factor is calculated. The low-energy dependence of the total astrophysical S factor serves as a source of information useful for the so-called second "lithium puzzle". A comparison of the obtained results with experimental data is performed.

1. A. S. Solovyev and S. Yu. Igashov, Phys. Rev. C 96, 064605 (2017).
2. A. S. Solovyev and S. Yu. Igashov, Phys. Rev. C 99, 054618 (2019).

The speaker is a student or young scientist

No

Section

1. Experimental and theoretical studies of nuclear reactions

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