

STUDY OF THE ${}^3\text{H}({}^3\text{H}, 2\text{n}){}^4\text{He}$ AND ${}^3\text{He}({}^3\text{He}, 2\text{p}){}^4\text{He}$ REACTIONS IN THE FRAMEWORK OF THREE-CLUSTER MICROSKOPIC MODEL

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The reactions ${}^3\text{H}({}^3\text{H}, 2\text{n}){}^4\text{He}$ and ${}^3\text{He}({}^3\text{He}, 2\text{p}){}^4\text{He}$ are investigated within a fully microscopic cluster model featuring a three-cluster exit channel. A Hyperspherical Harmonics basis is used to describe the three-cluster continuum. The resulting astrophysical *s-factor* of both reactions is in good agreement with experimental data. Analysis of the low-energy scattering parameters reveals no evidence for a hidden resonance state would increase the cross-section of the reactions, and would help to resolve the solar neutrino problem.