

**ON THE STRUCTURE OF EXCITED STATES OF NUCLEI ${}^4\text{He}$, ${}^6\text{He}$ AND ${}^6\text{Li}$
FROM THE ${}^3\text{H}(\alpha, \text{tt})\text{p}$ AND ${}^3\text{H}(\alpha, \tau\text{t})\text{n}$ REACTIONS**

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Analysis of the spectra τ -t and t-t coincidences obtained for different pairs of registration angles τ -particles and tritons in the kinematically complete study of three-particle ${}^3\text{H}(\alpha, \text{tt})\text{p}$ and ${}^3\text{H}(\alpha, \tau\text{t})\text{n}$ nuclear reactions at energies of alpha particles 67,2 MeV was performed. Experimentally, higher than the correspond thresholds of decay a single state with t + t structure of ${}^6\text{He}$ ($E^* \approx 18,3$ MeV), and the doublet structure $\tau + \text{t}$ in the ${}^6\text{Li}$ ($E^* \approx 21,59$ MeV and $E^* \approx 21,9$ MeV) was observed. At the same time energy positions and widths of 2 - 4 excited states of ${}^4\text{He}$ and the ratios of their decay modes through t + p and $\tau + \text{n}$ were determined.

Keywords: clustering of nucleus, three-body nuclear reaction, kinematically complete experiment, unbound excited level, the ratio of decay modes.