

INVESTIGATION OF THE GROUND AND THE FIRST EXCITED STATES OF ${}^5\text{Li}$

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The $\alpha + d$ system was investigated in a kinematically complete experiment by ${}^2\text{H}(\alpha, p\alpha)n$ three-body reaction with an α -beam energy 27.2 MeV. The unbound first excited and ground states of ${}^5\text{Li}$ were observed and its parameters were determined. Coincidence $p\alpha$ -spectrum was fitted by model of the sequential decay ${}^5\text{Li}$ ground and excited states through the $\alpha + p$ channel. The best agreement with the data was obtained assuming the following parameters of ground state: $E_{\alpha p} = 2.14$ MeV, $\Gamma = 1.30$ MeV; and of first excited state: $E_{\alpha p} = 4.8$ MeV, $\Gamma = 2.0$ MeV.