

# MEASUREMENT OF THE ${}^7\text{Li}(d,\alpha\alpha)n$ REACTION UNDER THE SPECIAL KINEMATICAL CONDITIONS

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Measurement difficulties of the three body reactions can be partially avoided using special kinematical conditions. Namely, if one outgoing particle is detected at  $0^\circ$  and its energy is measured it is sufficient to measure only the energy of one of the other two outgoing particles in order to have kinematically complete experiment. In this way the second detector can cover a large solid angle. Hundred and sixty KeV deuteron beam was used to bombard the  ${}^7\text{LiF}$  target. The  $\alpha$ -particle energy pulses from both detectors together with their time of flight differences were recorded. Fig. 1. shows kinematical calculations for the nominal angle ( $135^\circ$ ) of the second detector. All events should be confined inside the boundaries given by  $105^\circ$  and  $165^\circ$  kinematical loci. The main purpose of the experiment is to get the information on the first excited state of  ${}^5\text{He}$  and on reaction mechanisms with special attention to the quasi-free reaction process. Fig. 2. shows raw data from the first measurements.

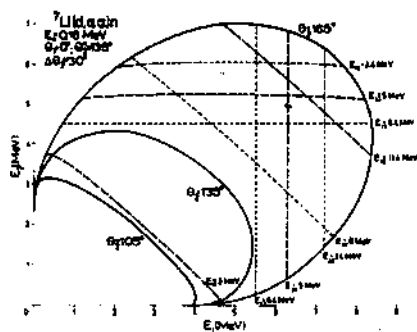


Fig. 1.



Fig. 2.