

The search for a quasi-bound η ^3He state in dp collisions with COSY-ANKE

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The $dp \rightarrow ^3\text{He} \eta$ reaction is known for the unexpected energy dependence of its total cross section, which rises rapidly to its plateau value within the first 1 MeV of excess energy Q . This behaviour has been ascribed to a strong final state interaction and may indicate a quasi-bound η ^3He state. In order to investigate the possibility of spin-dependent contributions to the total cross section, the deuteron tensor analysing power has been measured in an excess energy range from $Q = 0$ MeV up to above $Q = 10$ MeV at the COSY-ANKE spectrometer. This allows one to compare the magnitudes of the contributions from the two spin configurations in the entrance channel with the strong variation seen in the average production amplitude. Furthermore, a weak angular dependence of T_{20} was also extracted and provides insight into the structure of the production amplitude close to threshold.

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