

Observation of a peak in the forward differential cross section of the $pp \rightarrow \{pp\} \pi^0$ reaction at 1–3 GeV beam energies

At the ANKE-COSY facility, there is a program for studying the reactions with the formation of $1S_0$ diproton $\{pp\}$ in the final state, which is achieved by selection of proton pairs with an excitation energy of less than 3 MeV. The peak with a peak at $T_p = 0.66$ GeV previously discovered on the ANKE is related to the excitation of the $\Delta(1232)$ isobar in the intermediate state; for the reaction $pp \rightarrow \{pp\} \pi^0$, the previous measurements suggest that in the energy dependence of the differential cross section there must be a second peak in the energy region of the order of 2 GeV. In this connection, the report processed data from several sessions in the beam energy range 1-3 GeV, and the energy dependence of the differential reaction cross section $pp \rightarrow \{pp\} \pi^0$ was obtained.

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