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Resonance-like coherent production of a pion pair in the reaction pd → pdππ in the GeV region

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Recently, after the discovery of the d*(2380) two-baryon resonance(D03), a candidate for the true dibaryon, it has been found that the puzzling ABC effect is associated with its excitation. Therefore this phenomenon has attracted a particular attention.
Here we present the observation of the ABC effect and D03 excitation in
pd⟶pdππ reaction via meson exchange in coherent kinematics.
An experimental study of the double pion production at the 0.8–2.0 GeV proton energies in the process p+d⟶p+d+(ππ)0 has been performed.
A distribution of the events over the dππ invariant mass revealed a clear peak at the 2.36 GeV/c2 mass with 104 MeV/c2 width. The parameters of the peak are close to those observed earlier WASA experiment at CELSIUS COSY, taking into account its possible broadening due to the meson exchange and the I = 1 contamination in the (ππ)0 pairs.

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