

XXV International Baldin Seminar on High Energy Physics Problems
"Relativistic Nuclear Physics and Quantum Chromodynamics"



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The $pd \rightarrow pd\pi\pi$ reaction with dibaryon $d^*(2380)$ excitation

The WASA@COSY collaboration observed in the total cross section of reaction $pn-d\pi^0\pi^0$ a clear dibaryon resonance in a non-strange sector with a mass of 2380 MeV and a remarkably narrow width of 70 MeV [1]. Later on the ANKE@COSY also found indications to excitation of this dibaryon in other reaction, $pd-pd\pi\pi$ [2]. For explanation of the ANKE@COSY data we applied the two-resonance model [3] to the reaction by inclusion of the t-channel σ -meson exchange between the proton and deuteron [4]. In this talk we extend the model [4] of the reaction $pd-pd\pi\pi$, taking into account the recent results of Ref. [5], where the $\Delta(1232)\Delta(1232)$ resonances channel was introduced in addition to the $d(2380)-D(2150)\pi$ and $d(2380)-d+\sigma$ channels of the decay of the $d^*(2380)$ resonance in describing the reaction $pn-d\pi^0\pi^0$.

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