ハドロンスクウェア

An Experimental study on the K^-pp bound state by using the d(π^+, K^+) reaction.

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Abstract

An experimental search for the *K−pp* bound state, which is considered the simplest kaonic nucleus, is performed by using the *d*(+*; K*+) reaction at J-PARC K1.8 beam line (J-PARC E27 experiment). The first data taking as a pilot run was carried out in June, 2012. The missing-mass spectrum of this reaction studied at the beam momentum of 1.7 GeV/*c*, which allows the production of (1405), was obtained for the first time and a significant peak shift by *∼*40 MeV was observed in the *Y\** region. In a preliminary proton-coincidence analysis, a sharp spike due to the *N*-*N* coupling and a broad enhancement around 2.3 GeV/*c*2, which might be attributed to the *K−pp* bound state, was clearly observed from the proton coincidence probability histogram. In this talk, the latest result of the inclusive and coincidence analyses will be discussed.