

Charge symmetry breaking in light hypernuclei

Monday, 6 June 2016 15:00 (0:25)

Collaboration

A1

Abstract content

At the Mainz Microtron MAMI the high-resolution spectroscopy of decay-pions in strangeness electro-production is used to extract the Λ hyperon ground state binding energy in ${}^4_{\Lambda}\text{H}$. This binding energy is used together with the ${}^4_{\Lambda}\text{He}$ ground state binding energy from nuclear emulsion experiments and with energy levels of the 1^+ excited state for both hypernuclei from γ -ray spectroscopy to address the charge symmetry in the strong interaction. The full understanding of the large and spin-dependent breaking of this symmetry in the $A = 4$ hypernuclei still remains one of the open issues of hypernuclear physics.

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Session Classification : Parallel Session B5