

Introduction to the topical session on “Three-body ΛNN force”

Wednesday, 29 June 2022 11:00 (15 minutes)

The hyperon puzzle in neutron stars is one of the most challenging questions to be solved in nuclear and astrophysics nowadays. To approach this problem, we need to clarify possible repulsion in the ΛN interaction in dense nuclear matter, in other words, possible repulsion in the ΛNN three-body force. In order to extract information on the ΛNN three-body force, precise measurement of Λ hypernuclear binding energies is proposed at J-PARC, employing a new beam line which will be constructed in the extended Hadron Experimental Facility planned at J-PARC. The data should be combined with elaborated theoretical studies as well as other experimental information, although such theoretical exploration seems quite challenging. In this topical session, we discuss how we can investigate the ΛNN three-body force and elucidate dense matter in neutron stars in collaboration with theorists and experimentalists.

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