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Using light hypernuclei to constrain hypernuclear interactions

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Hypernuclei provide important information to constrain the hyperon-nucleon (YN) and three-baryon (YNN) interactions. In this contribution, we will discuss our recent results obtained using chiral YN [1,2] and chiral YNN interactions for light hypernuclei up to $A = 8$.

We use the hypernuclei data to determine the charge-symmetry breaking (CSB) of YN interactions and for exploring the results using $A = 7$ and $A = 8$ isospin multiplets of hypernuclei [3,4]. We then employ the results of different chiral orders to reliably estimate the theoretical uncertainty [5]. Finally, we use the separation energies of light hypernuclei to pin down the leading chiral YNN interaction.

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- [2] J.Haidenbauer, U.G.Meißner, A.Nogga and H.Le, Eur. Phys. J. A 59 (2023), 63 [arXiv:2301.00722 [nucl-th]].
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- [5] H.Le, J.Haidenbauer, U.G.Meißner and A.Nogga, Eur. Phys. J. A 60 (2024), 3 [arXiv:2308.01756 [nucl-th]].

session

J. Strange Nuclear Systems

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