

Ξ -hypernuclei spectroscopy with the S-2S spectrometer

Wednesday, June 7, 2023 2:00 PM (28 minutes)

We are going to complete the construction of the S-2S spectrometer at the K1.8 beam line in J-PARC hadron hall, in May, 2023. The S-2S spectrometer is composed of “QQD” magnets to measure the missing-mass spectrum of $^{12}\text{C}(K^-, K^+)_{\Xi}^{12}\text{Be}$ reaction with a good energy resolution of 2 MeV(FWHM), which is so far the best energy resolution applied for the reaction. The existence of Ξ -hypernuclei is recently confirmed in several emulsion events, and attraction between Ξ^- and p is demonstrated in LHC-ALICE femtoscopy studies. However, better resolution and statistics data on the Ξ -hypernuclei are needed to pin down both real and imaginary parts of the ΞN potentials. In this talk, perspectives of the S-2S experimental programs will be also discussed.

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Session Classification: Hypernuclei and kaonic atoms

Track Classification: Hypernuclei and kaonic atoms