3rd Jagiellonian Symposium on Fundamental and Applied Subatomic Physics



Contribution ID: 107

Type: invited talk

Production of Double- Λ Hypernuclei via Ξ -Hypernuclear Decay at J-PARC

Tuesday, 25 June 2019 18:05 (20 minutes)

The investigation of hypernuclei with strangeness -2 is one of the hot topics in hypernuclear physics, and the advent of an intense kaon beam at J-PARC has enabled us to explore them in detail. We have proposed a new experiment to produce probably the lightest double- Λ hypernucleus, $_{\Lambda\Lambda}{}^{5}$ H. A substantial fraction of a Ξ -hypernucleus, $_{\Xi}{}^{7}$ H, which can be produced in the $^{7}\text{Li}(K^{-}, K^{+})$ reaction, is expected to decay into $_{\Lambda\Lambda}{}^{5}$ H + 2*n*. The mass of $_{\Lambda\Lambda}{}^{5}$ H will be determined by "decay pion spectroscopy", which was successfully applied for a single Λ hypernucleus at MAMI.

In this contribution, we will review the current situation of the strangeness -2 sector in hypernuclear physics and outline the concept of the proposed experiment.

Primary author: FUJIOKA, Hiroyuki (Tokyo Institute of Technology)

Presenter: FUJIOKA, Hiroyuki (Tokyo Institute of Technology)

Session Classification: Tuesday