Contribution ID: **133** Type: **not specified**

Lifetime measurements of light hypernuclei using K^- beam at J-PARC

Tuesday 27 August 2024 17:30 (2 hours)

Hypertriton, as the simplest hypernucleus, provides essential benchmarks for hypernuclear physics. However, we have struggled with the so-called "hypertriton lifetime puzzle"these years. To pin down the situation, we are proceeding with a new experiment at J-PARC to measure the lifetimes of light hypernuclei using the (K^-, \pi^0) reaction. The spin-none-flip nature of the reaction and the direct time-domain measurement of the decay time make our experiment unique and complimentary to heavy-ion based experiments. We first performed a proof-of-principle experiment using a helium-4 target, with which we have already reported the lifetime of hyperhydrogen 4 [1]. We have started taking data with a helium-3 target and successfully observed a signal of hypertriton production.

In this contribution, we would like to report the latest results and the outlook for the lifetime measurement of hypertriton.

[1] T. Akaishi et al. (J-PARC T77/E73 collaboration), Phys. Lett. B 845, 138128 (2023).

Author: HASHIMOTO, Tadashi (RIKEN)

Presenter: HASHIMOTO, Tadashi (RIKEN)

Session Classification: Poster