

Abstract Submitted
for the HAW14 Meeting of
The American Physical Society

Double hypernuclei experiment with hybrid emulsion method (J-PARC E07) HIROYUKI EKAWA, Kyoto University, J-APRC E07 COLLABORATION — Double hypernuclei are important probes to study the system with strangeness -2. In order to search for double hypernuclei, an upgrade experiment is planned at J-PARC K1.8 beam line. In the experiment, the KURAMA spectrometer system will detect Ξ^- production in the (K^-, K^+) reaction on a diamond target. SSDs located the upstream and the downstream of emulsion plates will record Ξ^- tracks which flight toward emulsion plates precisely. Tracks in SSDs and emulsion will be automatically connected by a hybrid method. Discoveries of more than 10 new double hypernuclear species are expected, which enable us to discuss binding energy in terms of mass number dependence. On the other hand, we will also observe X rays from Ξ^- atoms with a Germanium detector array installed close to the emulsion by tagging Ξ^- -stopped events. This will be the first measurement in the world and give information on the Ξ^- -potential shape at the nuclear surface region. Emulsion production has been completely done and a test experiment for some detectors of KURAMA spectrometer was carried out. In this talk, physics motivation and current status of the J-PARC E07 experiment will be reported.

Hiroiyuki Ekawa
Kyoto University

Date submitted: 01 Jul 2014

Electronic form version 1.4