

Abstract Submitted
for the HAW14 Meeting of
The American Physical Society

Scanning system and image process for double-lambda hypernucleus searching in nuclear emulsion JUNYA YOSHIDA, KAZUMA NAKAZAWA, KHIN THAN TINT, MYINT KYAW SOE, SHINJI KINBARA, AKIHIRO MISHINA, YOKO ENDO, HIROKI ITO, HIDETAKA KOBAYASHI, Gifu University, Japan, E07 COLLABORATION — A new method named “Overall scanning” is being developed to search for more events of double-lambda hypernucleus in nuclear emulsion. A computer-controlled optical microscope scans full volume of emulsion layers exhaustively and a high-speed, high-resolution camera takes their sequential microscopic images. Then, an image process picks out “double-lambda hypernucleus-like shapes” having multi tracks and 3 vertices stem from production and cascade weak decay of double-lambda hypernucleus. In this talk, I’ll present the current status of development and its operation. During test operations by E373’s emulsion plates, about 20cc volume of emulsion was scanned so far. It equals a half of an E373’s emulsion plate. Some candidates of double-lambda hypernuclei and twin single-lambda hypernucleus have been detected. Besides, 10^3 single-lambda hypernucleus and 10^3 alpha decays were found, which is calibration samples for range-energy relation.

Junya Yoshida
Gifu University, Japan

Date submitted: 30 Jun 2014

Electronic form version 1.4