

Abstract Submitted
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Observation of cascade weak decays of double hypernuclei HITOSHI TAKAHASHI, Institute of Particle and Nuclear Studies, KEK, KEK-PS E373 COLLABORATION — A hybrid-emulsion experiment E373 has been carried out at the KEK 12 GeV proton synchrotron using a 1.66 GeV/ c K^- meson beam. The purpose of this experiment is to study double-strangeness systems produced via Ξ^- hyperon capture at rest with ten times as large statistics as past experiments. We have completed emulsion scanning and have successfully found several events which include a sequential weak decay of a double hypernucleus. Among them, the results of the reconstruction of two events, “Demachiyanagi” and “Nagara”, were already reported. However, the recent change of the mass of a Ξ^- hyperon in particle listings by Particle Data Group affects the reconstructed binding energies of these events. The event reconstruction of two new events have been made. One of them, named “Mikage”, was uniquely identified as a cascade weak decay of a ${}_{\Lambda\Lambda}^6\text{He}$. The other event, “Hida”, was reconstructed most likely as a decay of a ${}_{\Lambda\Lambda}^{11}\text{Be}$. In this talk, we will give updated values of the binding energies of the first two events, and present the reconstructed results of two new events. The result of the reanalysis of the event found in the previous hybrid-emulsion experiment E176 will be also reported.

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