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The third generation Λ hypernuclear spectroscopy via the(e, e'K^+) reaction at Jefferson Lab[1] DAISUKE KAWAMA, JLAB E05-115 COLLABORATION — Spectroscopic studies of Λ hypernuclei via the (e,e'K^+) reaction play an important role to investigate Λ hypernuclear structure. The reaction favorably excites spin-filp states and produces mirror hypernuclei compared to hypernucleus via meson-induced reactions. So far, as a counter experiment, this is the only technique that allows absolute mass determination of hypernuclei with accuracies of a few 100 keV or better. Two previous experiments that we performed, JLab E89-009 and E01-011, established the experimental technique and we obtained hypernuclear mass spectra up to A $\sim$ 30 with energy resolution of $\leq$ 400 keV (FWHM). Our next experiment will investigate Λ hypernuclei in wide mass region up to A $\sim$ 50. A newly constructed electron spectrometer (HES) and splitter magnet will increase the hypernuclear yield by about 5 times while preserving the achieved energy resoluton. Together with the existing kaon spectrometer (HKS), the installation in Jefferson Lab's Hall C is starting from spring 2009. This presentation will give the latest preparation status of the experiment and outline of the experimental program and technique of the JLab E05-115 experiment.

[1]Japan Society for the Promotion of Science

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