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Spectroscopic study of hypernuclei via (e,e′K$^+$) reaction YUICHI OKAYASU, Dept. of Phys., Tohoku Univ., JLAB E01-011 COLLABORATION — A new hypernuclear spectroscopy experiment by the (e,e′K$^+$) reaction will be carried out in June 2005 at Hall C, Jefferson Lab (E01-011). In order to improve the successful pioneering Jlab E89-009 experiment, we introduce a newly designed high resolution and large solid angle spectrometer (HKS) for the kaon arm, and employ "Tilt method" for the electron arm. In the "tilt method," the electron spectrometer is vertically tilted by ∼8 degrees to reduce drastically the background electrons originating from Bremsstrahlung and Møller process. By adopting the new setup, we expected to : 1) increase hypernuclear yield by 50 times with higher beam current (∼30 μA) and thicker target(∼100 mg/cm^2), 2) improve to hypernuclear mass resolution twice better(∼400 keV[FWHM]). Under such condition, we plan to measure hypernuclear spectra for higher Z targets *i.e.* ^{28}Si, ^{51}V and ^{89}Y. We investigate Λ single particle behavior deep inside the nucleus and try to understand the nature of ΛN interaction comparing with ordinary nuclei. In this report, the analysis procedure for kaon identification will be described with preliminary hypernuclear mass spectrum.

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