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High resolution hypernuclear spectroscopy in a wide mass region

LULIN YUAN, Hampton University, JLAB HKS COLLABORATION — High resolution hypernuclear spectroscopy for medium heavy and heavy hypernuclei will enable us to extract the spin dependent Λ -N interaction beyond p-shell and help us understand the role of strangeness in dense nuclear matter. In the light mass region, hypernuclear spectroscopy by electroproduction will help us understand the effect of Charge Symmetry Broken (CSB) by studying neutron rich hypernuclei and reveal new nuclear structure aspects induced by strangeness. The preliminary results from JLab HKS experiment, which was carried out in 2005, has demonstrated the ability of hypernuclear electroproduction in obtaining high resolution spectroscopy by utilizing high precision electron beam. In this talk, I will present the current updated spectra of ${}_{\Lambda}^{12}\text{B}$, ${}_{\Lambda}^{28}\text{Al}$ and ${}_{\Lambda}^7\text{He}$. The experimental setup and spectrometer calibration procedure will also be described.

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