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Study of the Λ/Σˆ0 electroproduction in the low-Qˆ2 region at JLab

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We have been performed a high resolution hypernuclear mass spectroscopy measurement by the $(e, e'K^+)$ reaction at the Thomas Jefferson National Accelerator Facility (JLab). The differential cross section for the Λ/Σ^0 electroproduction is fundamental information to estimate yields of hypernuclei in experiments. Although Λ/Σ^0 photoproduction has been studied well by CLAS, SAPHIR, LEPS and so on, Λ/Σ^0 electroproduction data is very limited quantitatively and qualitatively.

We performed the E12-17-003 experiment in JLab Hall-A in 2018. In this experiment, we have taken data on a gas hydrogen target, which is important not only for an absolute mass scale calibration, but for the study of Λ/Σ^0 electroproduction. In this talk, I will report the results of the differential cross section for the $p(e, e'K^+)\Lambda/\Sigma^0$ reaction at $Q^2 \sim 0.5$ $(\mathrm{GeV}/c)^2$.

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