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**Calibration Procedure of the HKS Time-Of-Flight System**[1]
RAFAEL BADUI, JOERG REINHOLD, Florida International University, JEFFERSON LAB E05-115 (HES/HKS) COLLABORATION — Experiment E05-115 at Thomas Jefferson National Accelerator Facility is a spectroscopic study that will measure the excitation spectra of hypernuclei in the (e,e'$K^+$) reaction on light-to-medium mass targets. A time-of-flight system consisting of three scintillator planes (ToF) is part of the particle identification. To achieve the required accuracy, raw time measurements, TDC values, need to be corrected for cable offsets, pulseheight effects (slewing correction) and speed of propagation in the scintillator material. We developed a calibration procedure that analyzes covariances between different detectors to extract a system of linear equation. The latter is then solved by a matrix solver. The mathematical procedure and results achieved with this method will be presented.

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