Exclusive $\eta$ photoproduction and $\Sigma$ beam asymmetries at GlueX

WILLIAM MCGINLEY, Carnegie Mellon University, GLUEX COLLABORATION — GlueX is capable of making $\Sigma$ beam asymmetry measurements using a tagged, linearly-polarized 9 GeV photon beam incident on a hydrogen target. Measurements of the $\Sigma$ beam asymmetry for the exclusive reaction, $\gamma p \rightarrow \eta p$, will provide insight into the meson production mechanism. These measurements are the first beam asymmetry results for the $\eta$ in this energy range and are expected to further constrain Regge theory models for photoproduced pseudoscalar mesons. This talk will present preliminary results of the photon $\Sigma$ beam asymmetry as a function of the Mandelstam variable, $t$, for multiple $\eta$ decay modes using data from a recent run.