Simulations for KLF

Software Meeting

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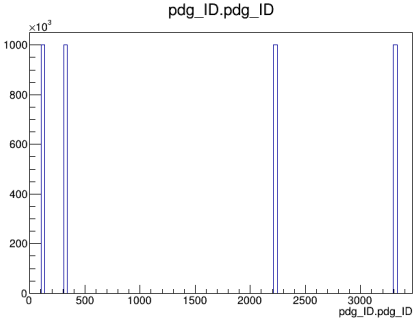
August 13th, 2024

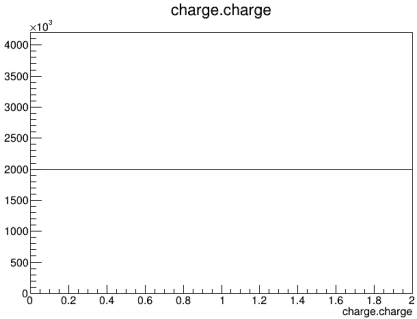
KLGenerator_hddm

- `https://github.com/sdobbs/KLGenerator_hddm_V3` (forked from `https://github.com/nickzachariou/KLGenerator_hddm_V3`)
- Covers a reasonably comprehensive range of K_{Long} reaction channels on both proton and neutron
- Tunable K_{Long} beam parameters
- Can also generate γp and np events
- This study is concerned with $K_{Long} p \to K^+ \Xi^0$, with the Ξ^0 decaying via $\Lambda \pi^0$ (final state of $K^+ p \pi^- \gamma\gamma$)

Some Raw Generator Plots

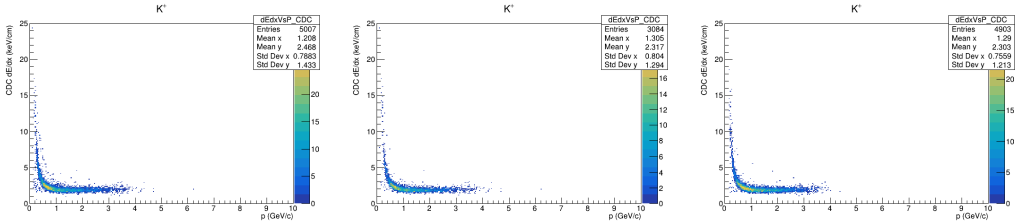
- $K_{Long}p \rightarrow K^{+}\Xi^{0}$, raw plots from generated files (1M events);





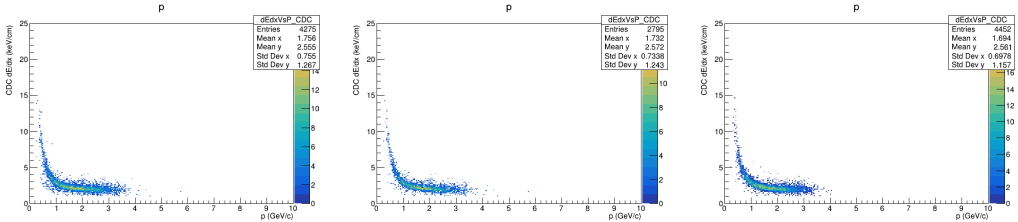
ReactionFilter Outputs

- Testing various ReactionFilter conditions, starting with kinematic fit
- dE/dX vs momentum of K^+ for No kinfit (left), vertex only kinfit (middle), and vertex and 4-momentum kinfit (right)



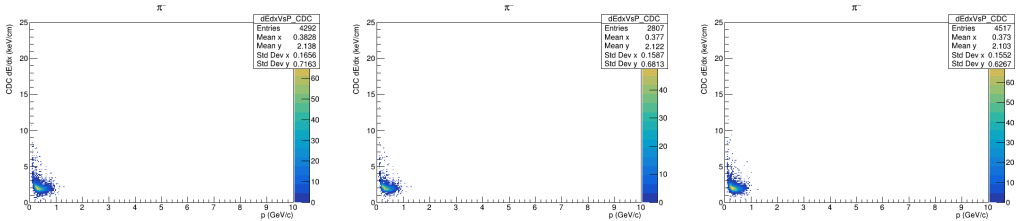
ReactionFilter Outputs

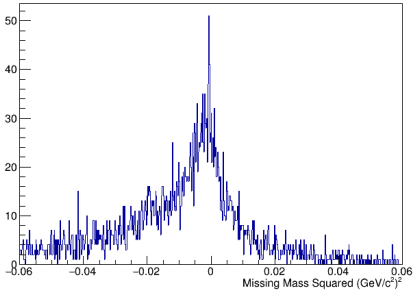
- Testing various ReactionFilter conditions, starting with kinematic fit
- dE/dX vs momentum of proton for No kinfit (left), vertex only kinfit (middle), and vertex and 4-momentum kinfit (right)



ReactionFilter Outputs

- Testing various ReactionFilter conditions, starting with kinematic fit
- dE/dX vs momentum of π^- for No kinfit (left), vertex only kinfit (middle), and vertex and 4-momentum kinfit (right)



Status

- Catching up in earnest on analysis, things are coming together, bear with me!
- Further scaling up event production (10x current generated samples)
- Working on plot list
- Background studies?