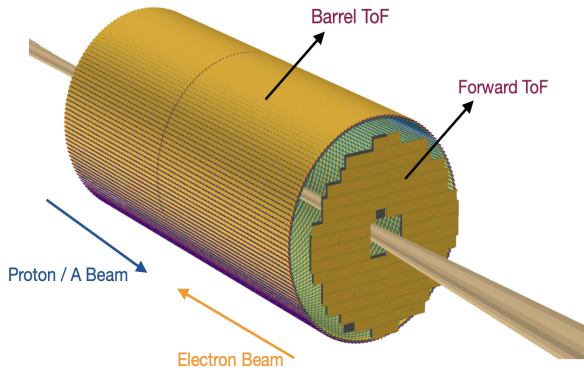


Time of Flight (ToF) simulation status

Honey Khindri (IIT Madras)

August 18, 2026

DD4HEP Simulations ToF



- ▶ Goal : quantify how TOF configurations affect $D^0 \rightarrow K^- \pi^+$ tagging/reconstruction efficiency.
- ▶ Study : PID separation of K and π .

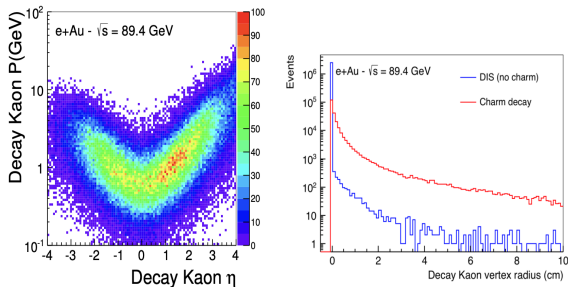
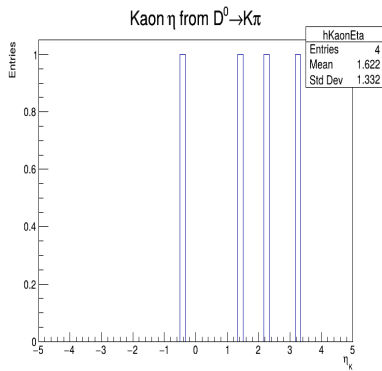
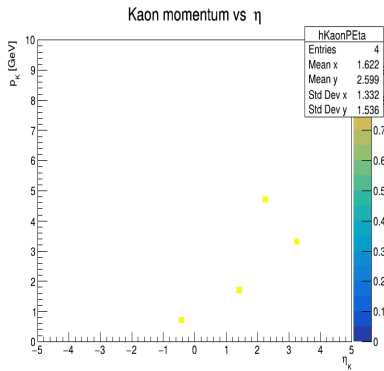


FIG. 5. Left: The distribution of the momentum of a decay K from $c\bar{c}$ production events versus pseudo-rapidity. Right: The vertex position of K in inclusive DIS (*blue line*) compared to $c\bar{c}$ production events (*red line*).

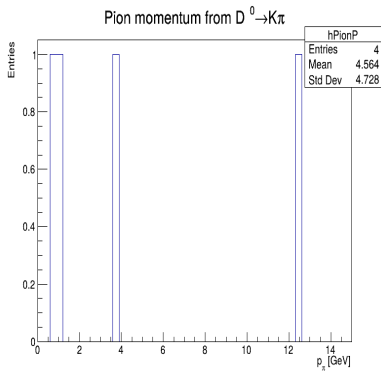
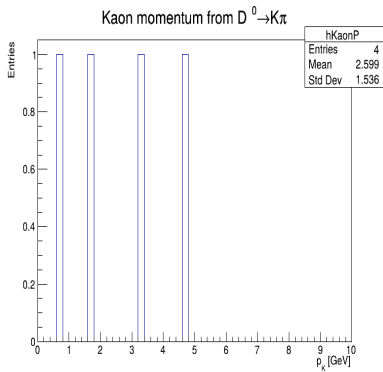
DD4HEP Simulations (FToF)

- ▶ **Sample** -/eic/EPIC/RECO/26.02.0/epic_craterlake/DIS/NC/10x100/minQ2=1/pythia8NCDIS_10x100_minQ2=1
- ▶ No. of files : 4 , no of events :1083 (each file)
- ▶ Each file : 0-4 $D^0 \rightarrow K^- \pi^+$ events ,

$$\underline{D^0 \rightarrow K^- \pi^+}$$



$$\underline{D^0 \rightarrow K^- \pi^+}$$



Queries

- Is there any dedicated sample for $D^0 \rightarrow K^- \pi^+$ and Λ_C decay with more stat.