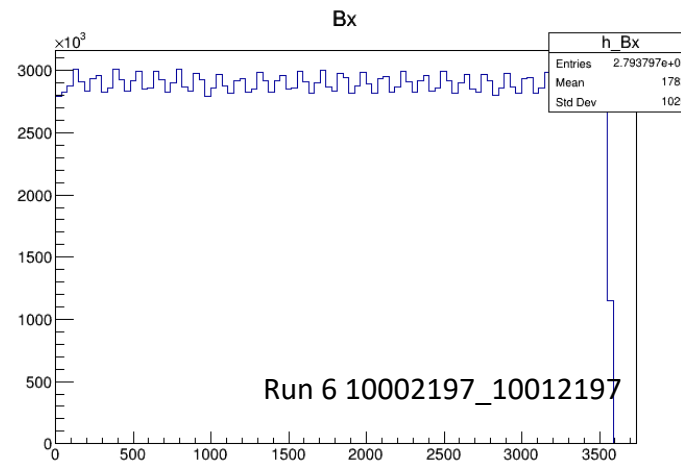
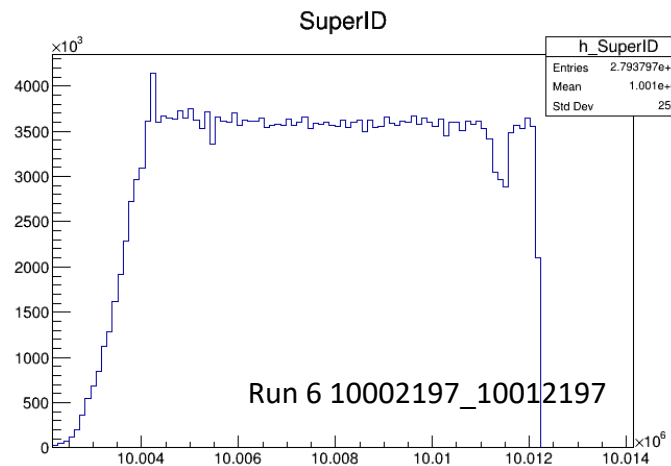


# Muon rate from newly merged files

/eos/experiment/mu-e/staging/daq/2023/dgm\_merged/

Run	Intensity	Target
Run 2	Low intensity (expect 2 MHz)	w/o target
Run 5	High intensity (expect 40 MHz/30 MHz?)	w/o target
Run 6	High intensity (expect 40 MHz/30 MHz?)	with target (3cm)

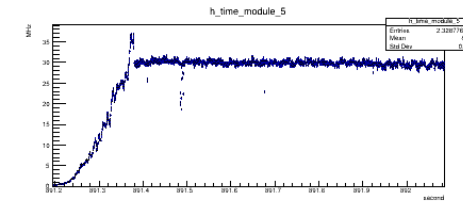
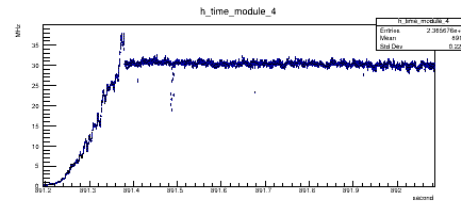
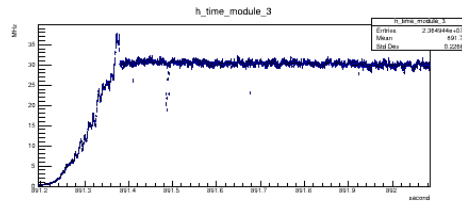
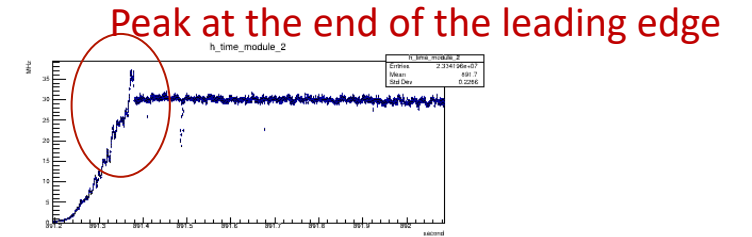
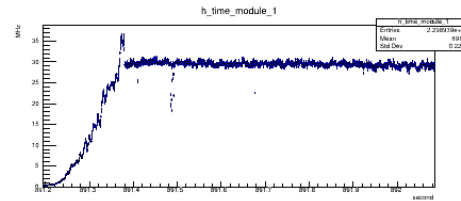
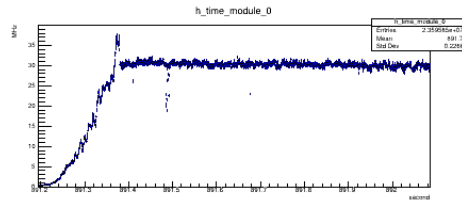


$$\text{Time [second]} = 25 \text{ ns} * (\text{SuperID} * 3564 + \text{Bx})$$

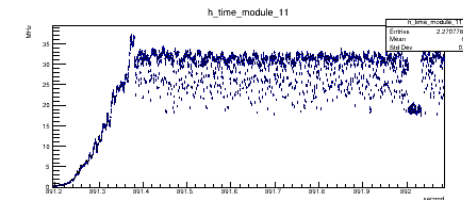
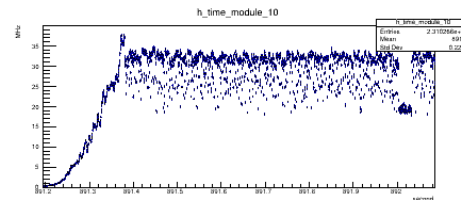
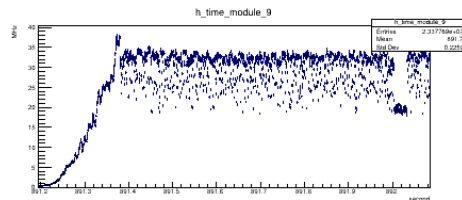
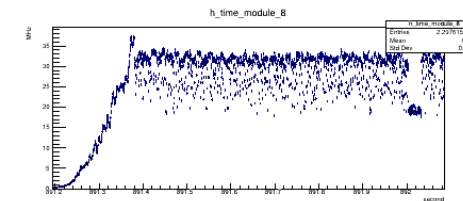
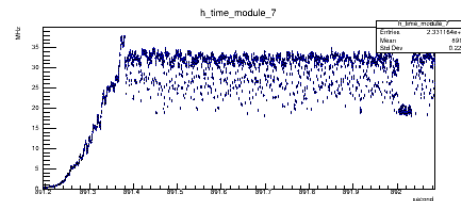
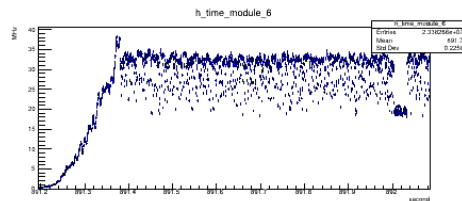
# Module rate

Run 6; 10002197\_10012197 (1 file)

**Station 1; module 1-6**  
Rate is stable at ~30 MHz



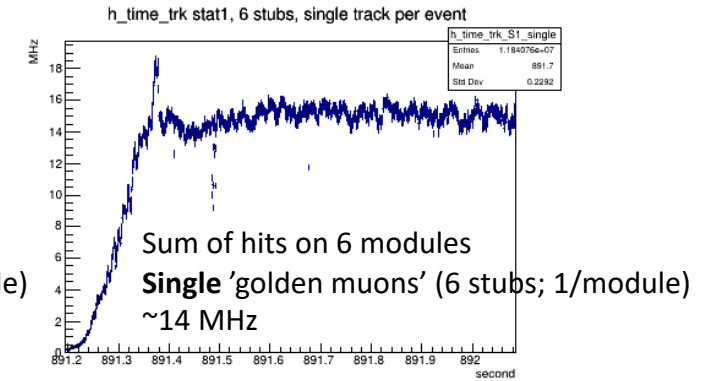
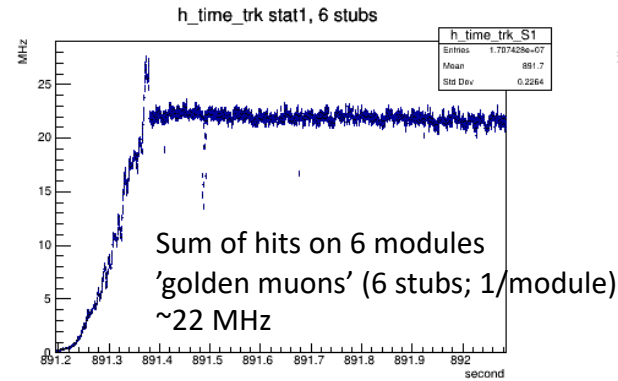
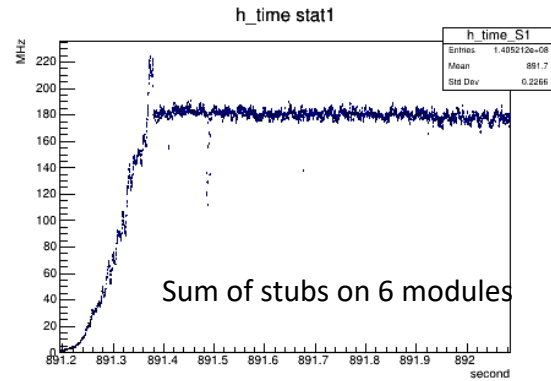
**Station 2; module 7-12**  
Rate is ~30-35 MHz  
but seems less stable  
than station 1  
→ DAQ problem?



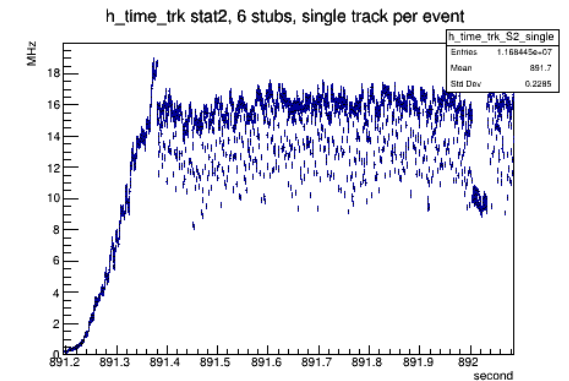
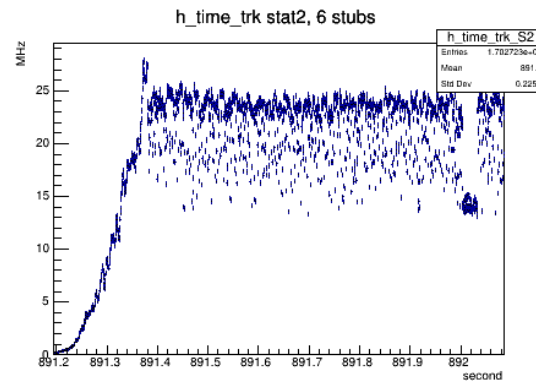
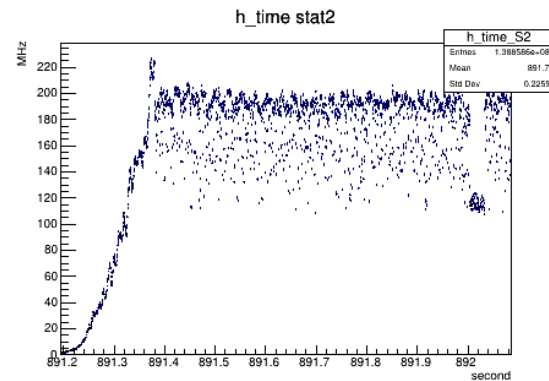
# Station rate

Run 6; 10002197\_10012197 (1 file)

Station 1; module 1-6



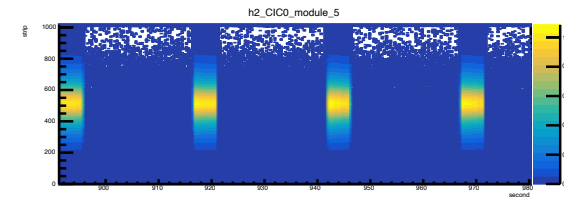
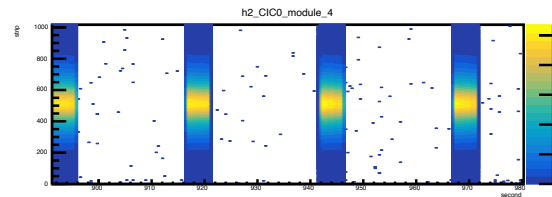
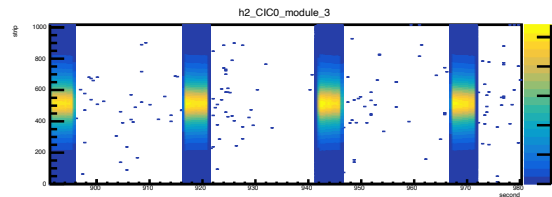
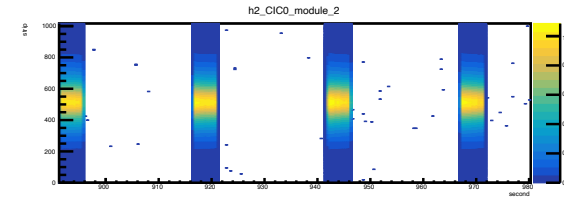
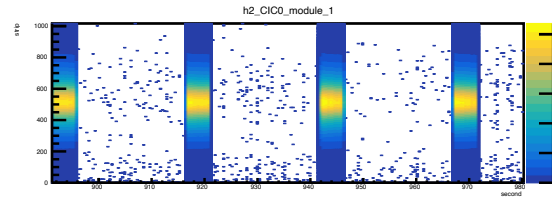
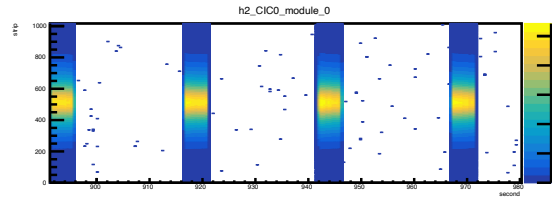
Station 2; module 7-12



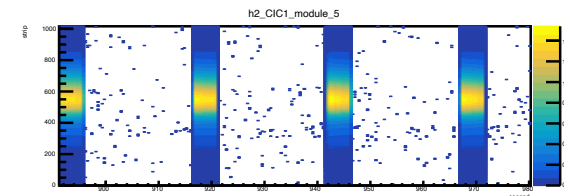
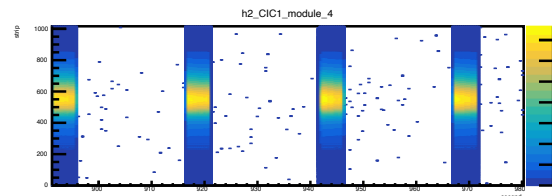
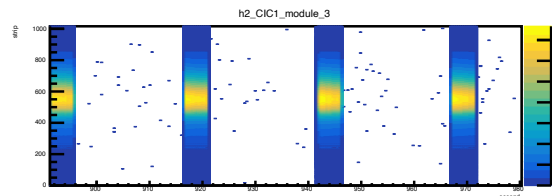
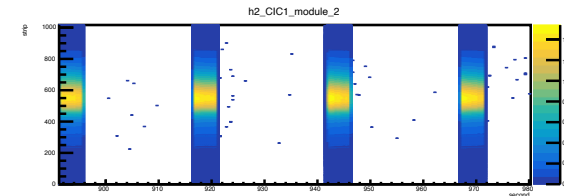
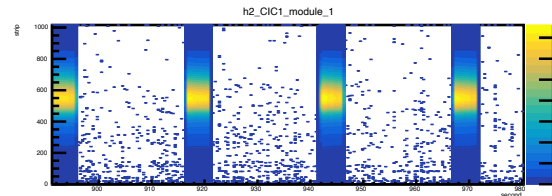
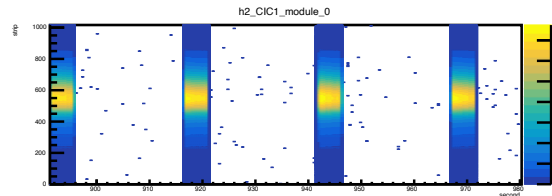
# Strip rate

Run 6; 10002197\_11012197 (100 files)

Station 1  
CIC0



Station 1  
CIC1

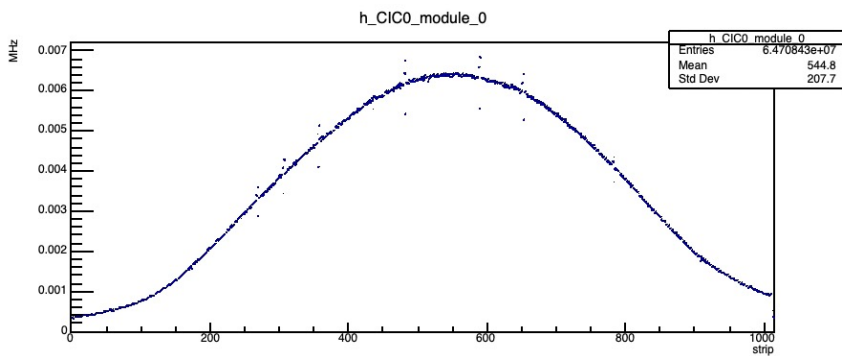




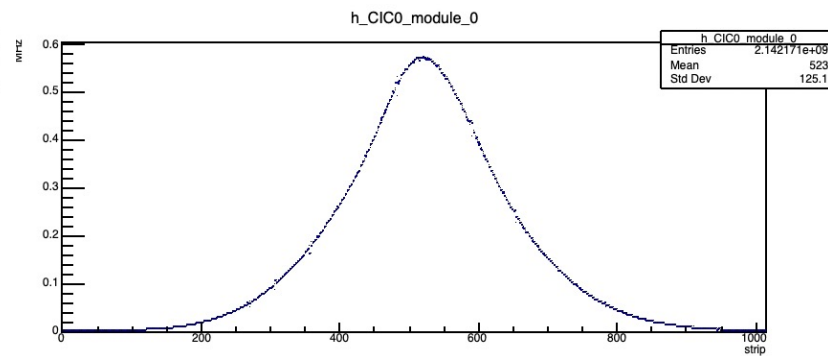
# Average strip rate

Run 2, 5 and 6 (100 files)

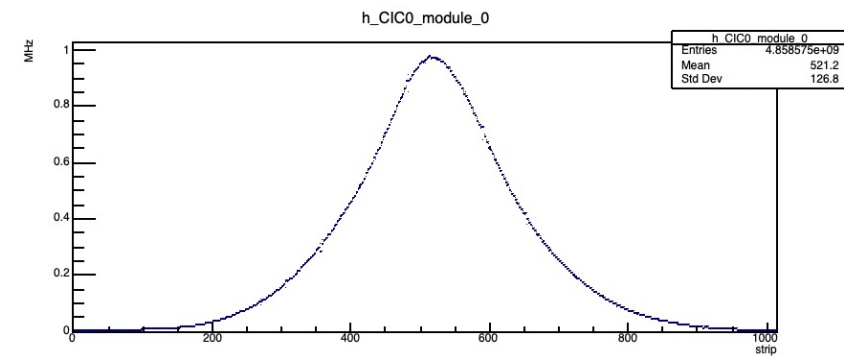
- Project the 2D plot into 1D to get the average rate



Run 2 (LI)  
Average strip rate **~0.006 MHz**



Run 5 (HI w/o tgt)  
Average strip rate **~0.6 MHz**



Run 6 (HI w/ tgt)  
Average strip rate **~1.0 MHz**

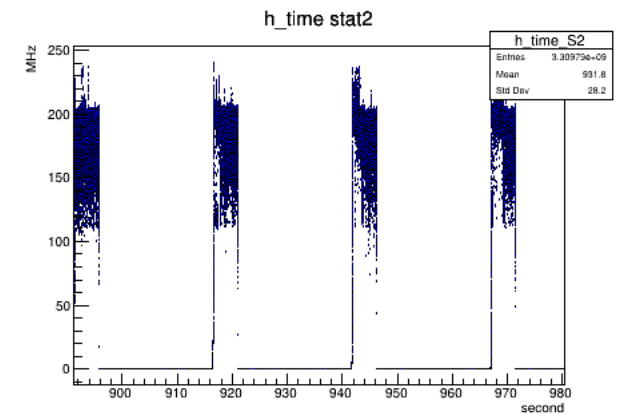
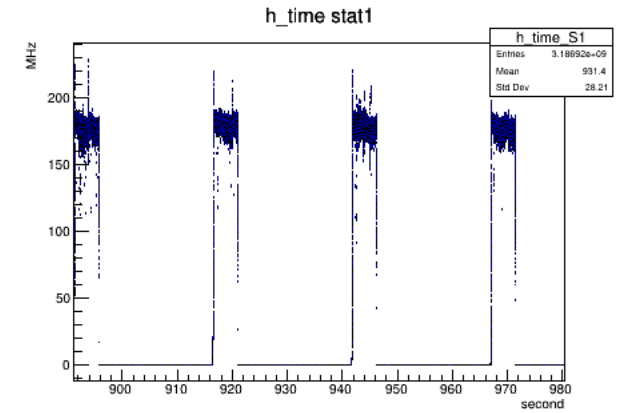
# Rate summary

Run	Config	Module rate	Golden muon rate	Ave strip rate
Run 2	LI w/o tgt	1 MHz	0.6 MHz (S1 & S2) 0.6 MHz (single 'trk', S1 & S2)	0.006 MHz
Run 5	HI w/o tgt	20 MHz	15 MHz (S1 & S2) 10 MHz (single 'trk', S1 & S2)	0.6 MHz
Run 6	HI w/ tgt	30 MHz	22 MHz (S1 & S2) 14 MHz (single 'trk', S1 & S2)	1.0 MHz

Averaged from 3 or 4 spills (in ~80 seconds)

# Next

- Entire runs check with average rates and the spill time widths
- Number of muons for runs (lumi etc)
- Rate with FairMUonE-reconstructed tracks





# Backup