Beam summary in 2011.Dec

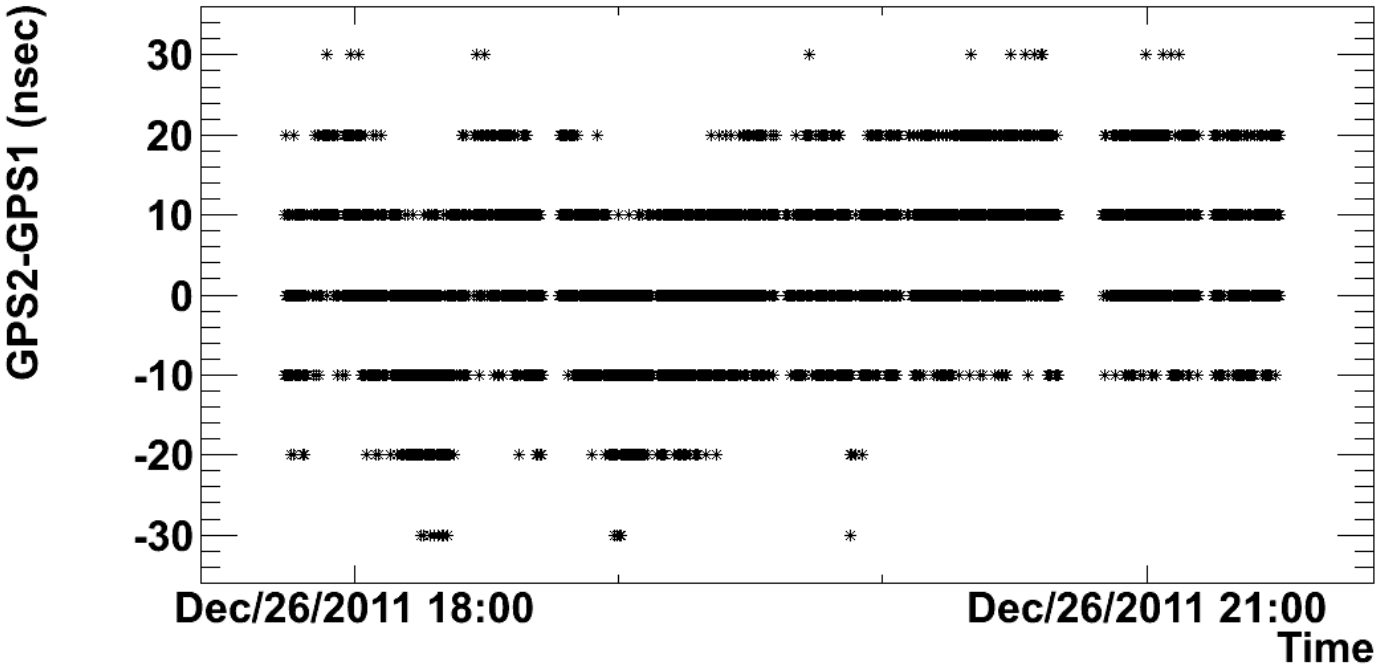
- Check the beam summary data in the continuous run in 2011.12
  - Beam line run# : 390042
  - Total # of spills : 3740

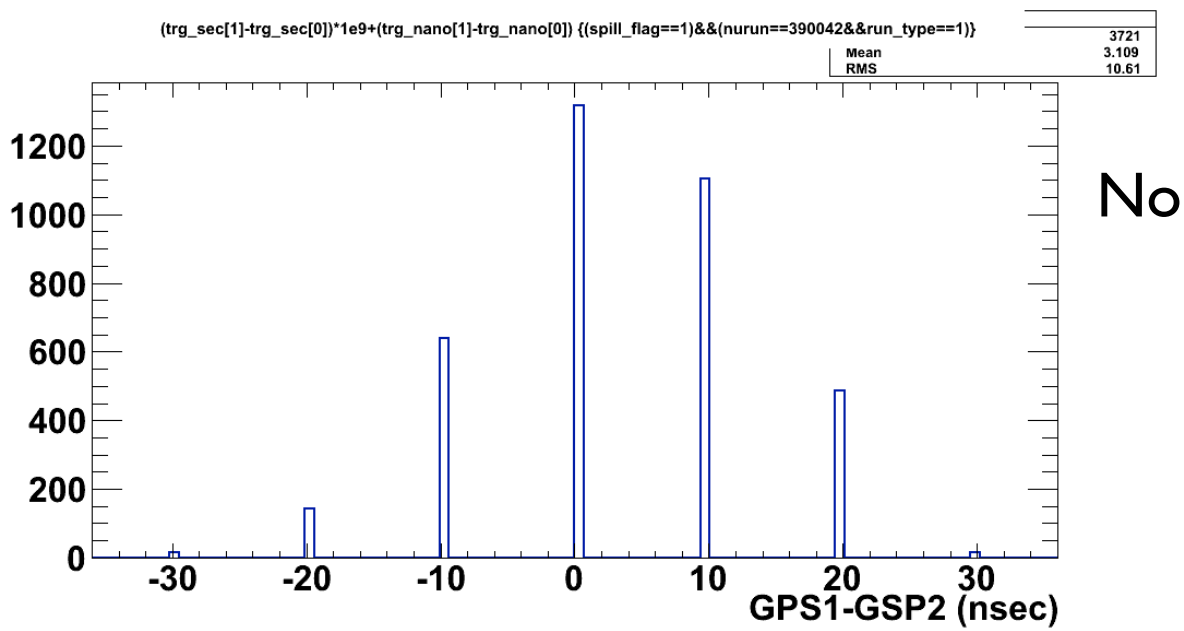
Good spill selection

same selection as last analysis meeting,
but order is different

1. physics run
   - run_type is "physics run" and all Horn ON → *Not used in Run39(&40)*
   - exclude spills for beam tuning, beam study
2. TriggerFlag is "Beam Trigger" (it means that beam during MR operation)
3. Good GPS status
4. CT05 # of protons per spill > 1e11 in order to exclude spills which no beam in MR (due to machine interlock etc..)
5. normal condition cut
   - exclude unusable spills (e.g. PV2 unstable etc..)
6. Horn cut
   - nominal ±5kA for all the three Horns → *Not used in Run39(&40)*
7. Mumon cut
   - beam angle within 1mrad (abs(Si fit x) < 10cm and abs(Si fit y) <10cm)
   - Si total Q / CT05 cut : nominal ± 5% → *Need new nominal value*

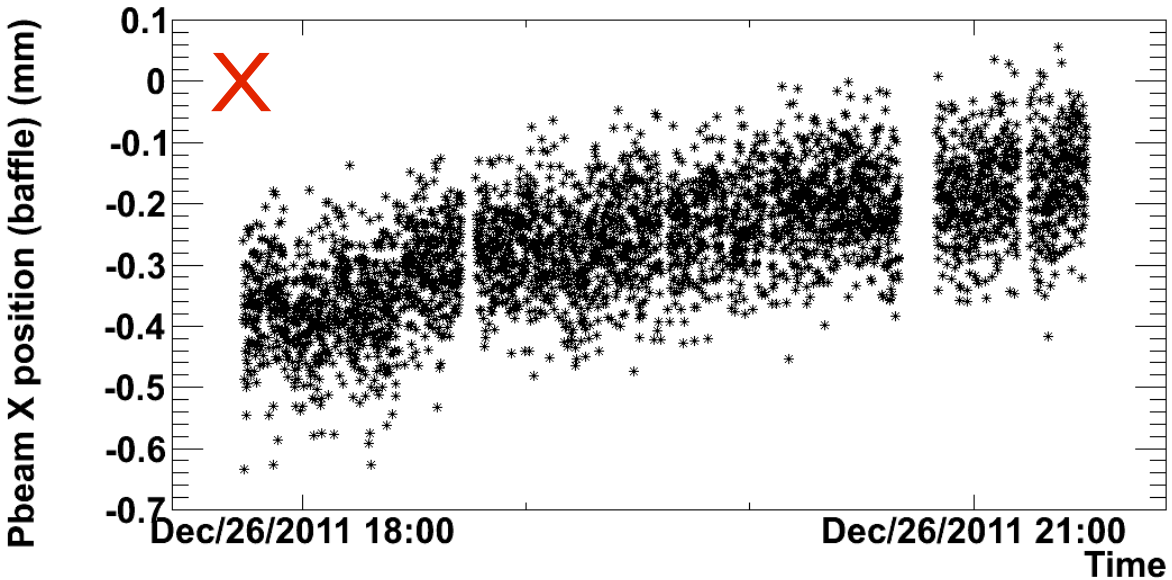
GPS Status

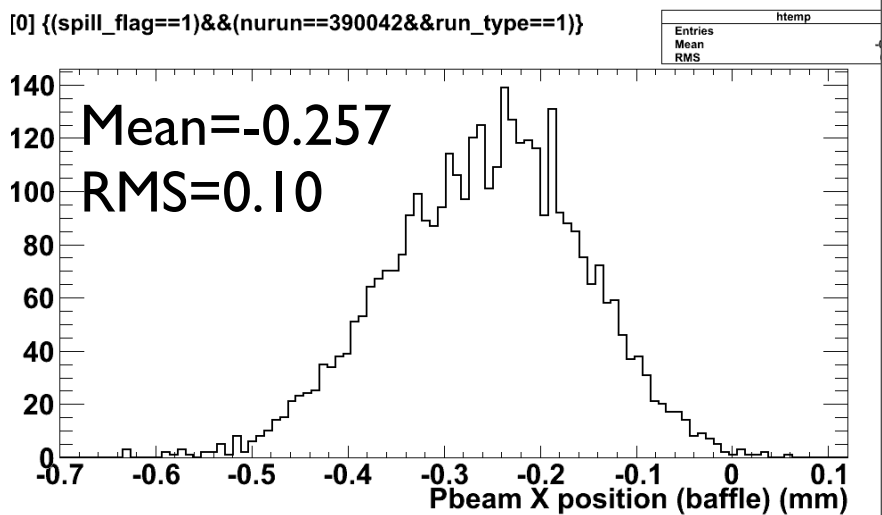


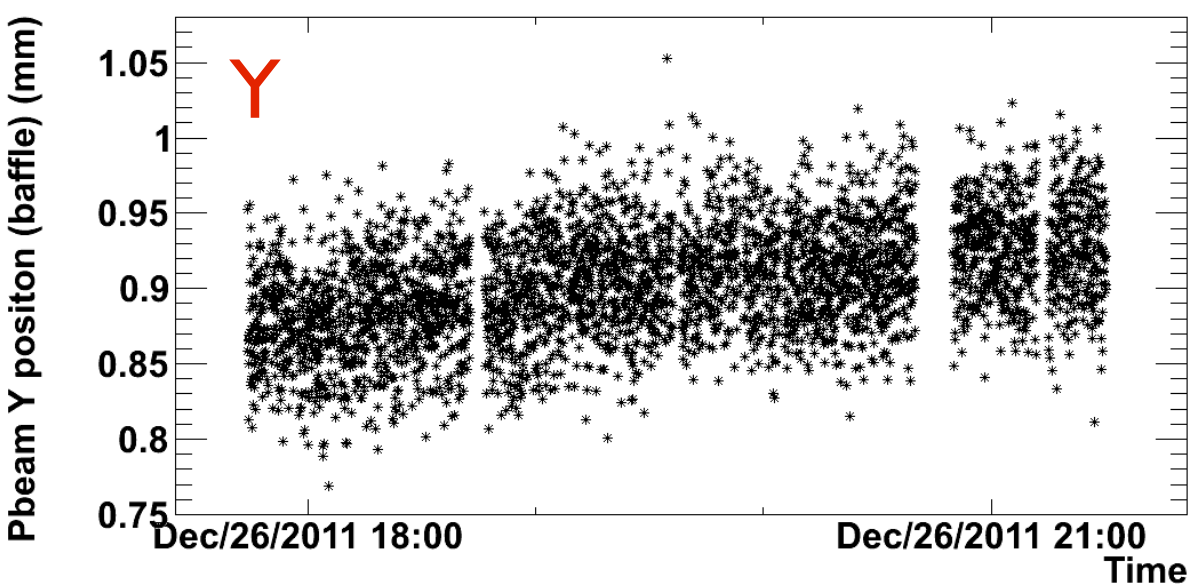


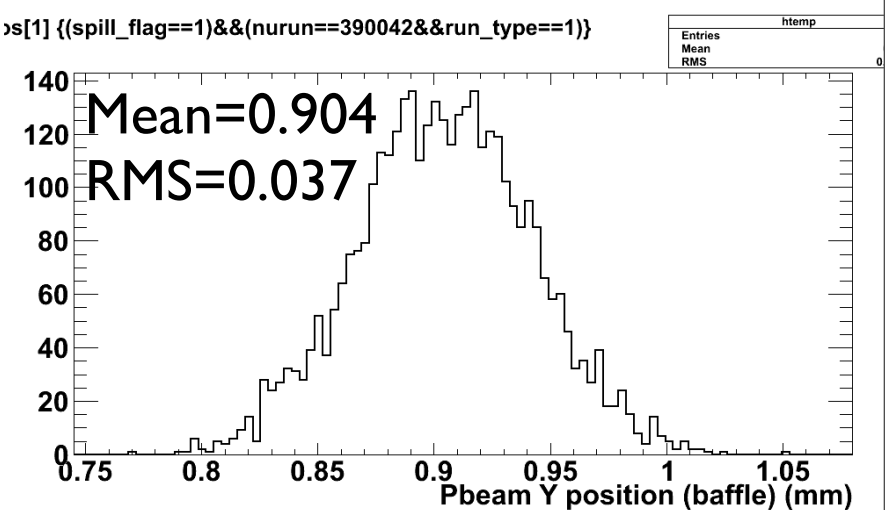
No spill failed by GPS spill selection

Proton beam center position

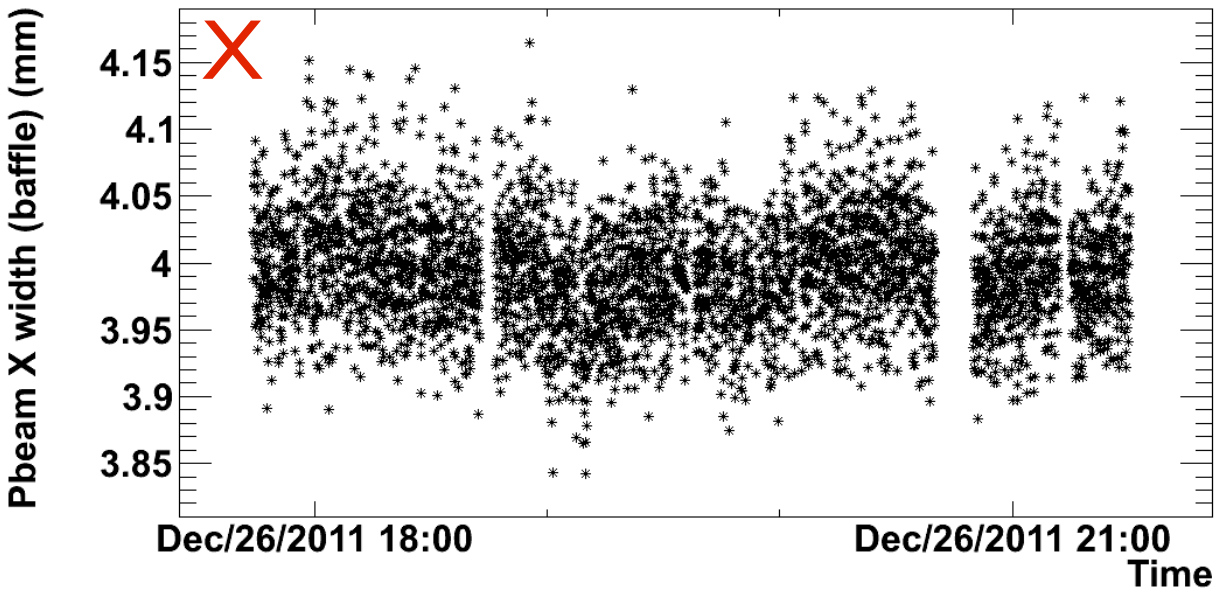


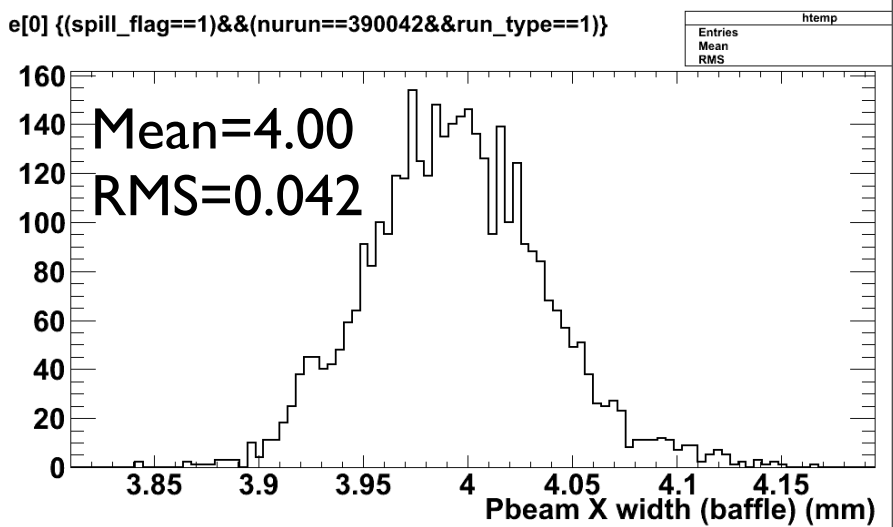


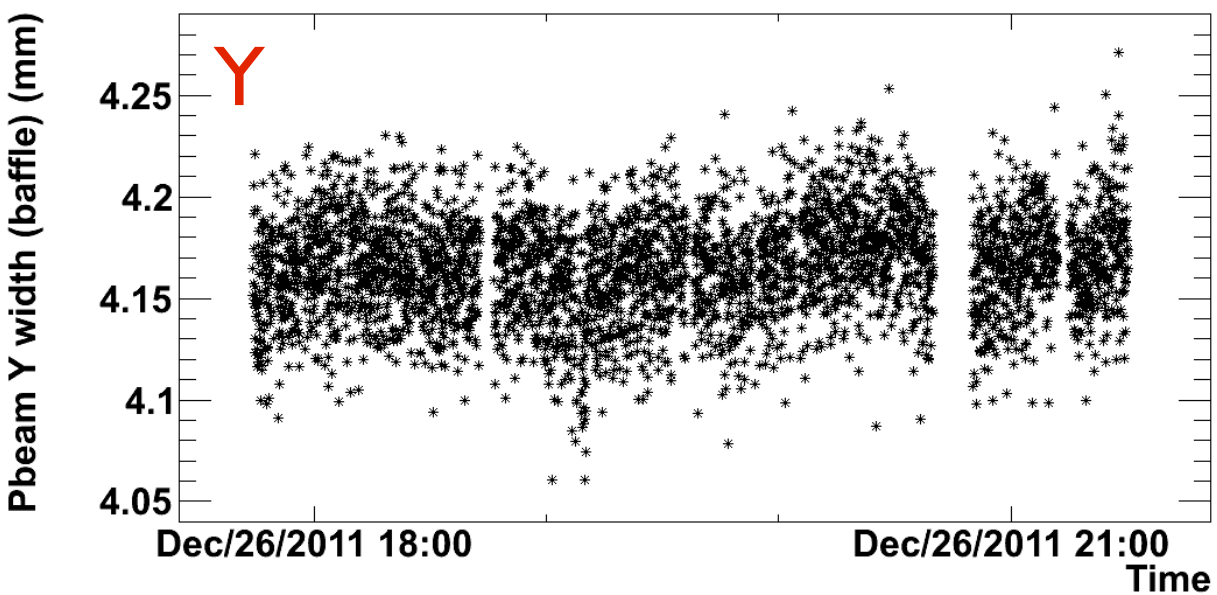


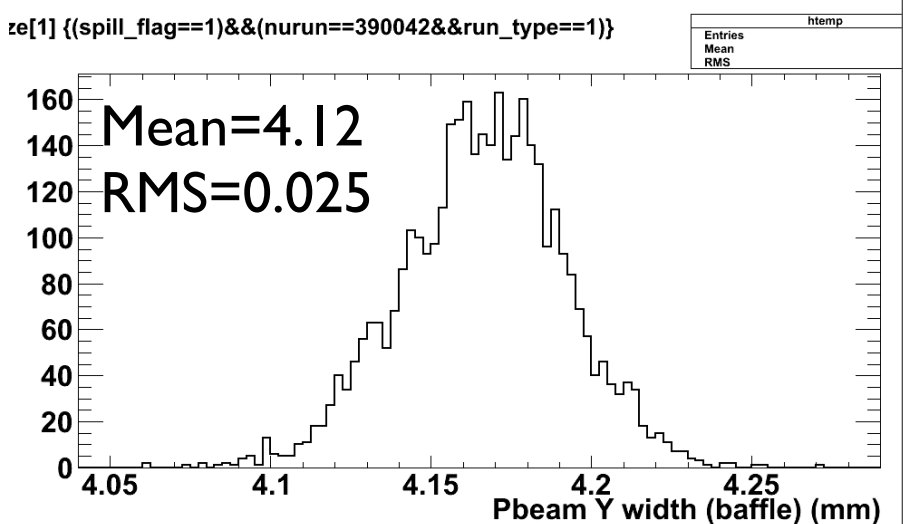


Proton beam center size

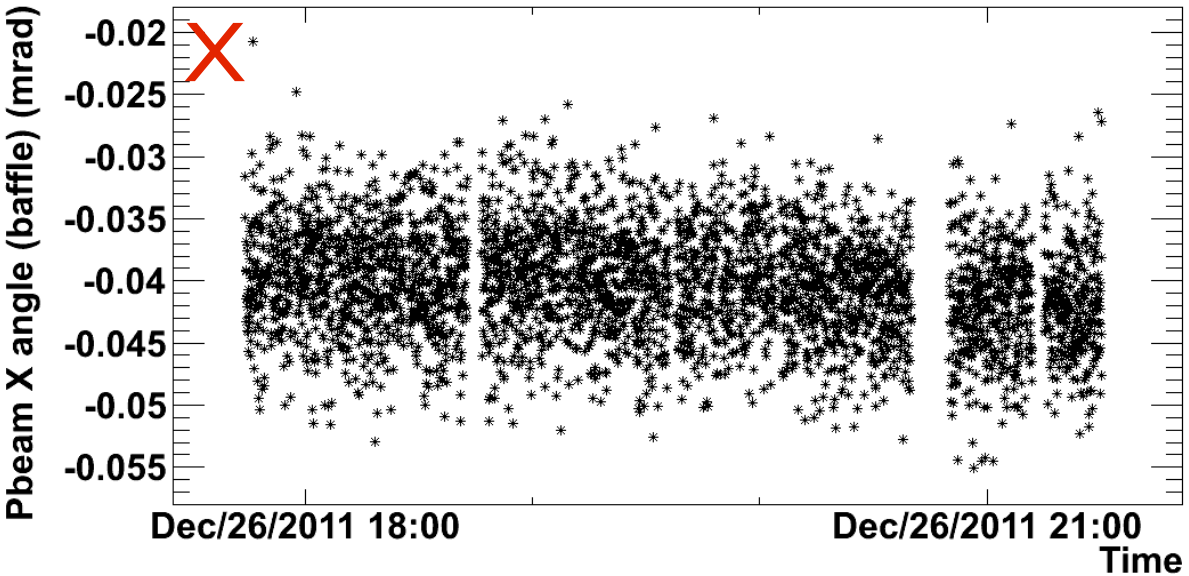


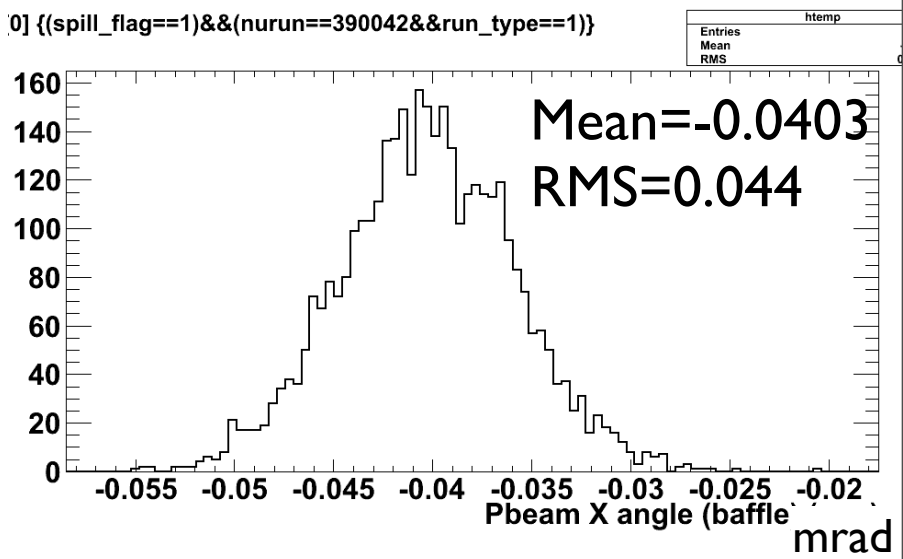


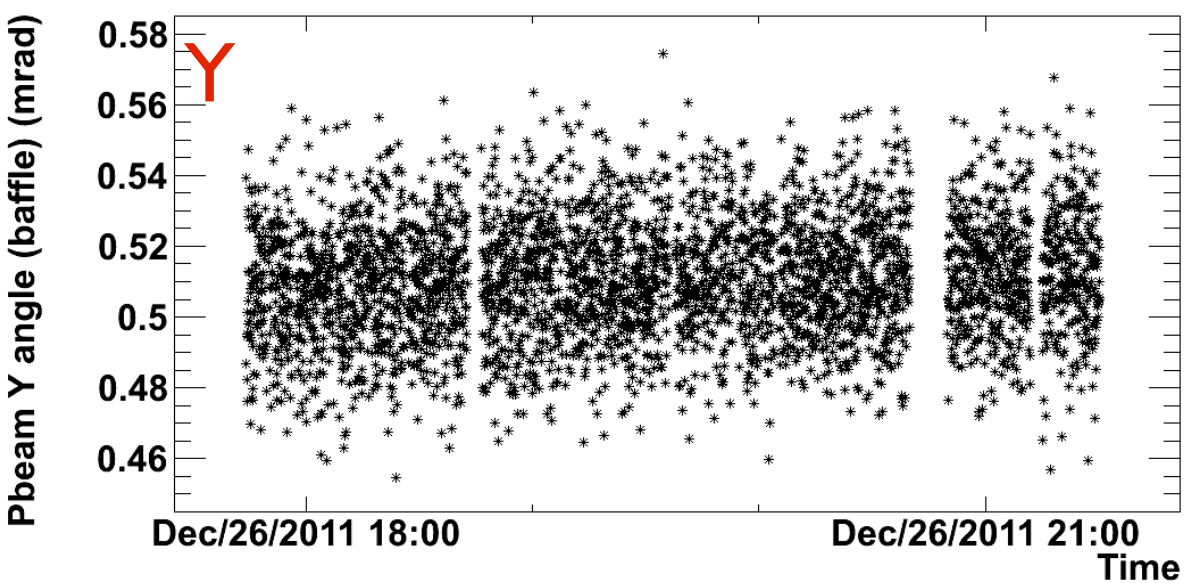


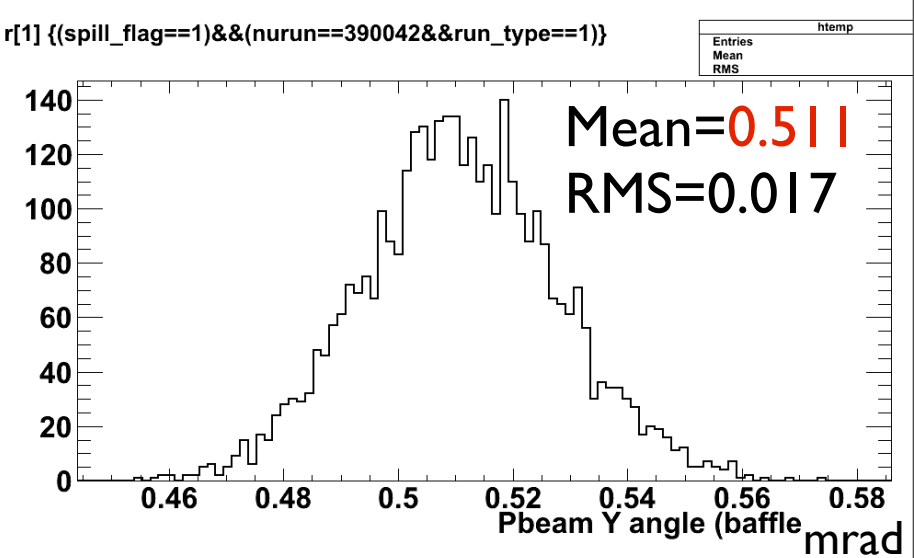


Proton beam center angle

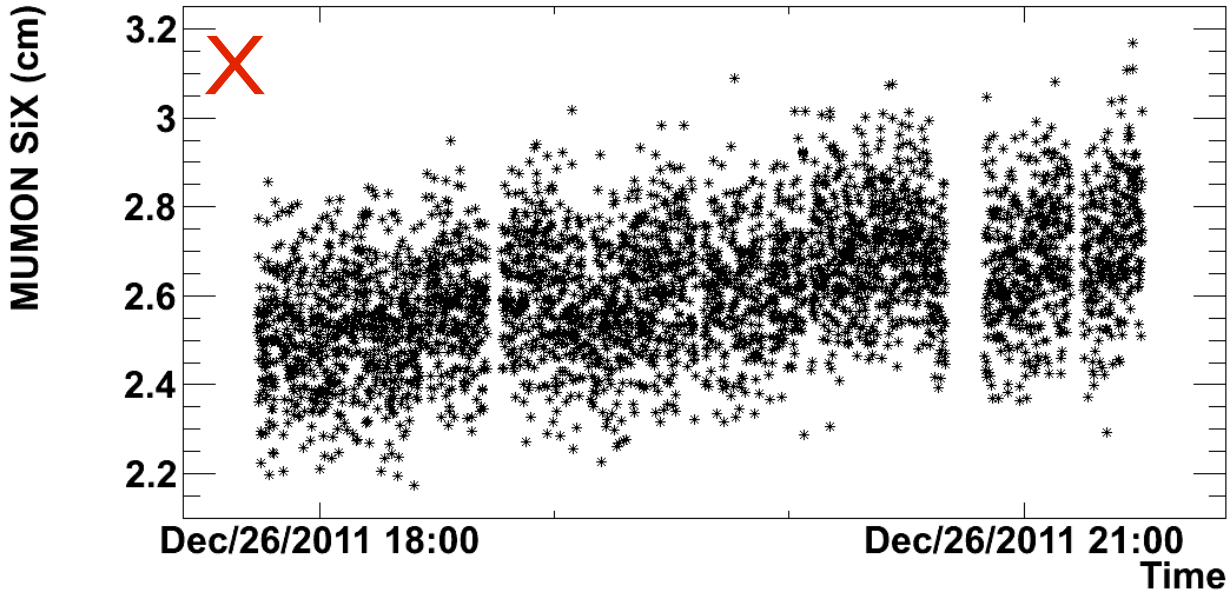


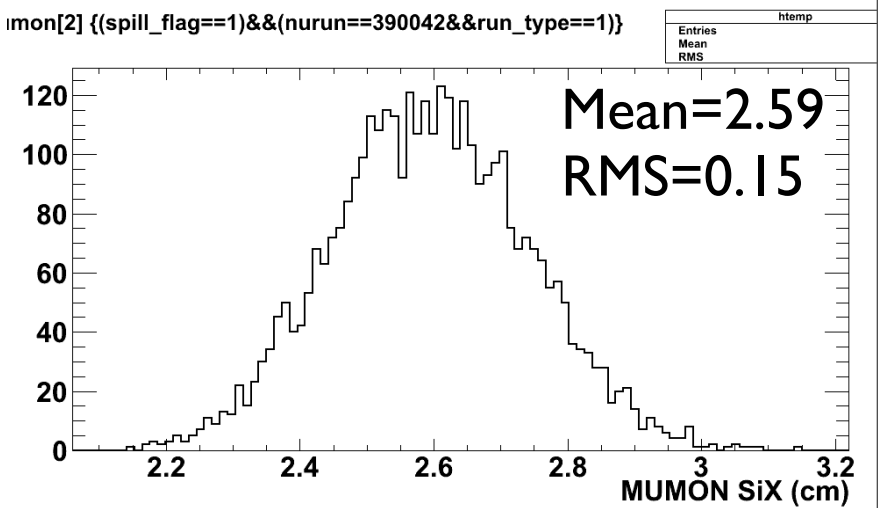


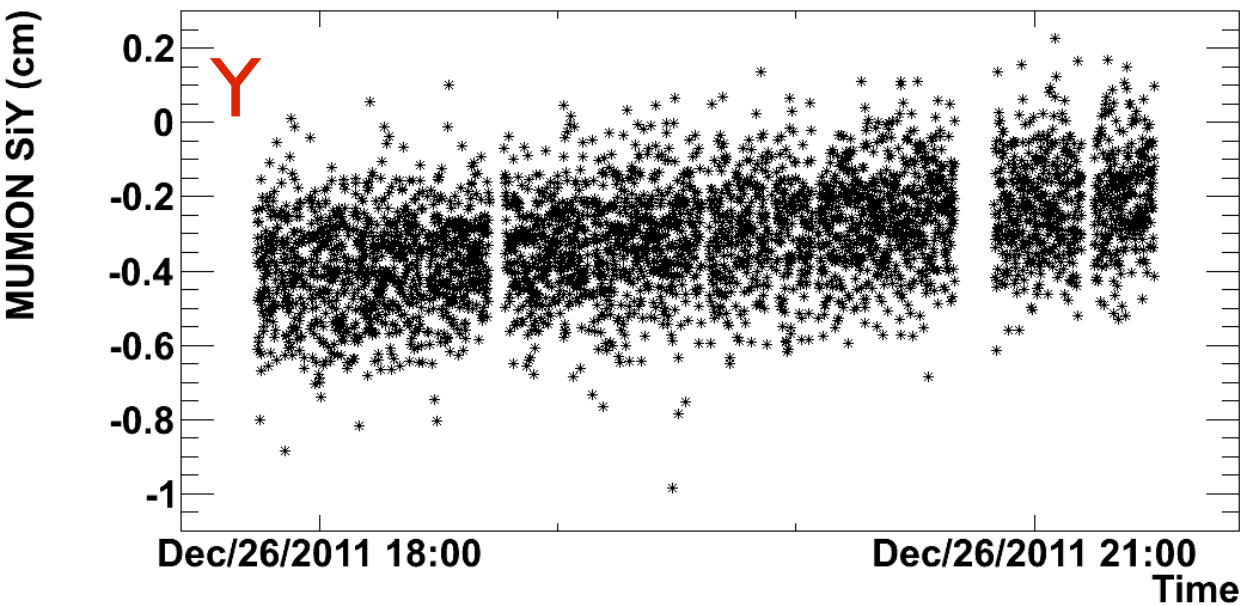


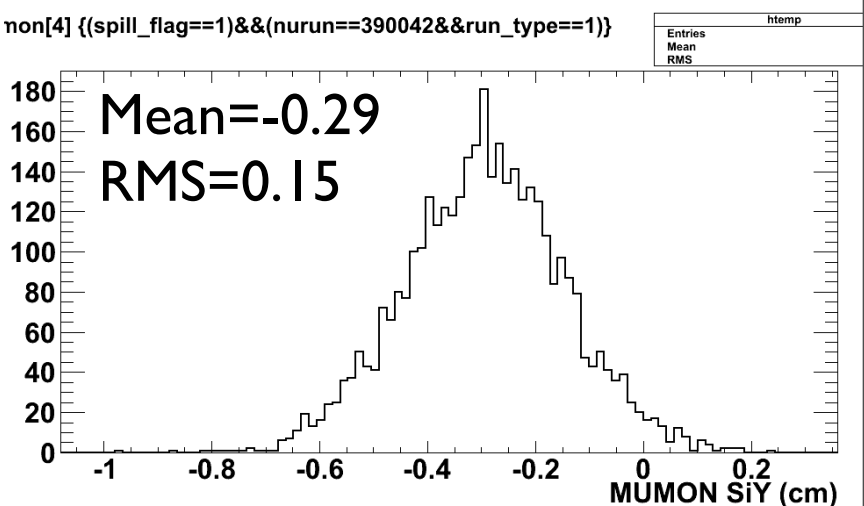


MUMON Si beam profile center



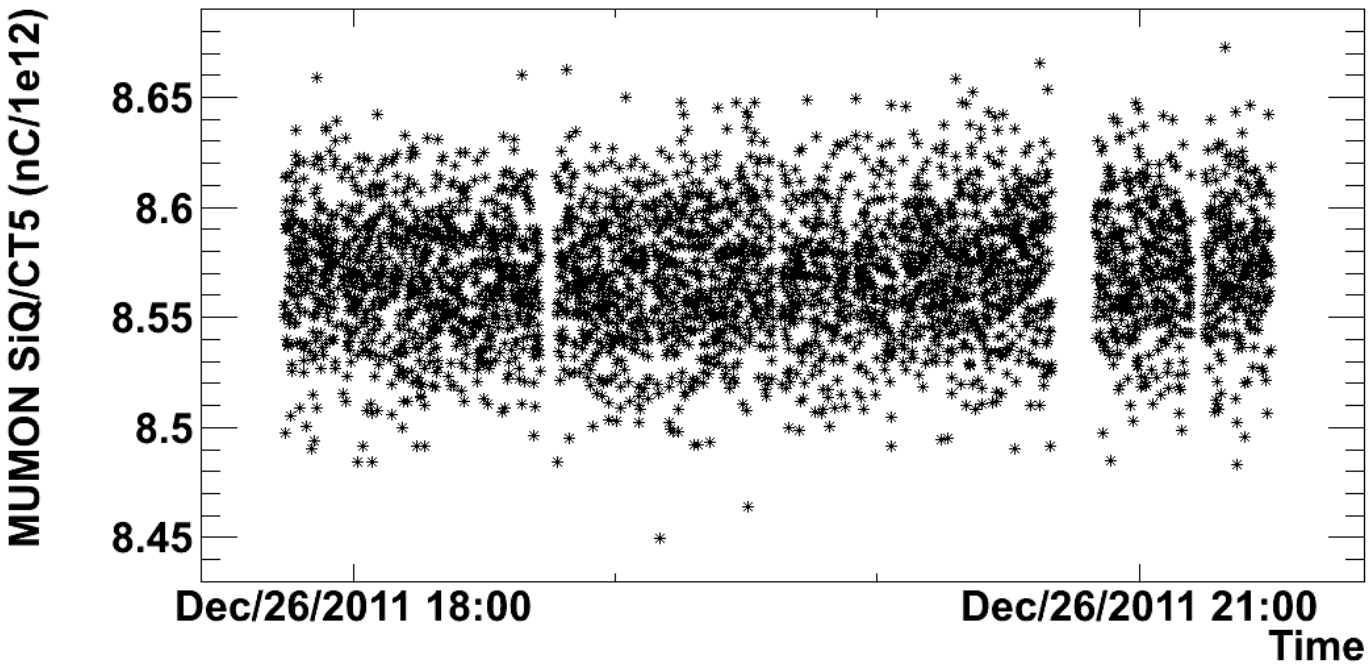


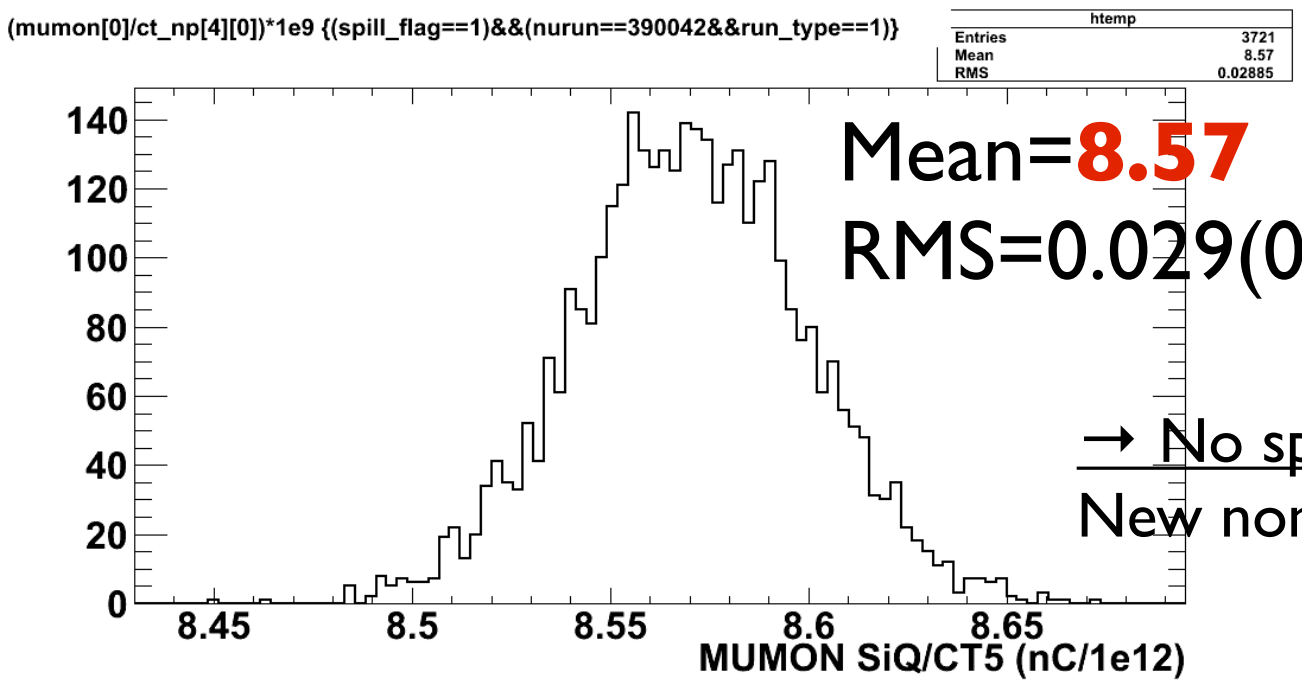




→ No spills failed by MUMON cut

MUMON Si total Q/CT5





Mean=**8.57**

RMS=0.029(0.3%)

→ No spills failed by MUMON cut

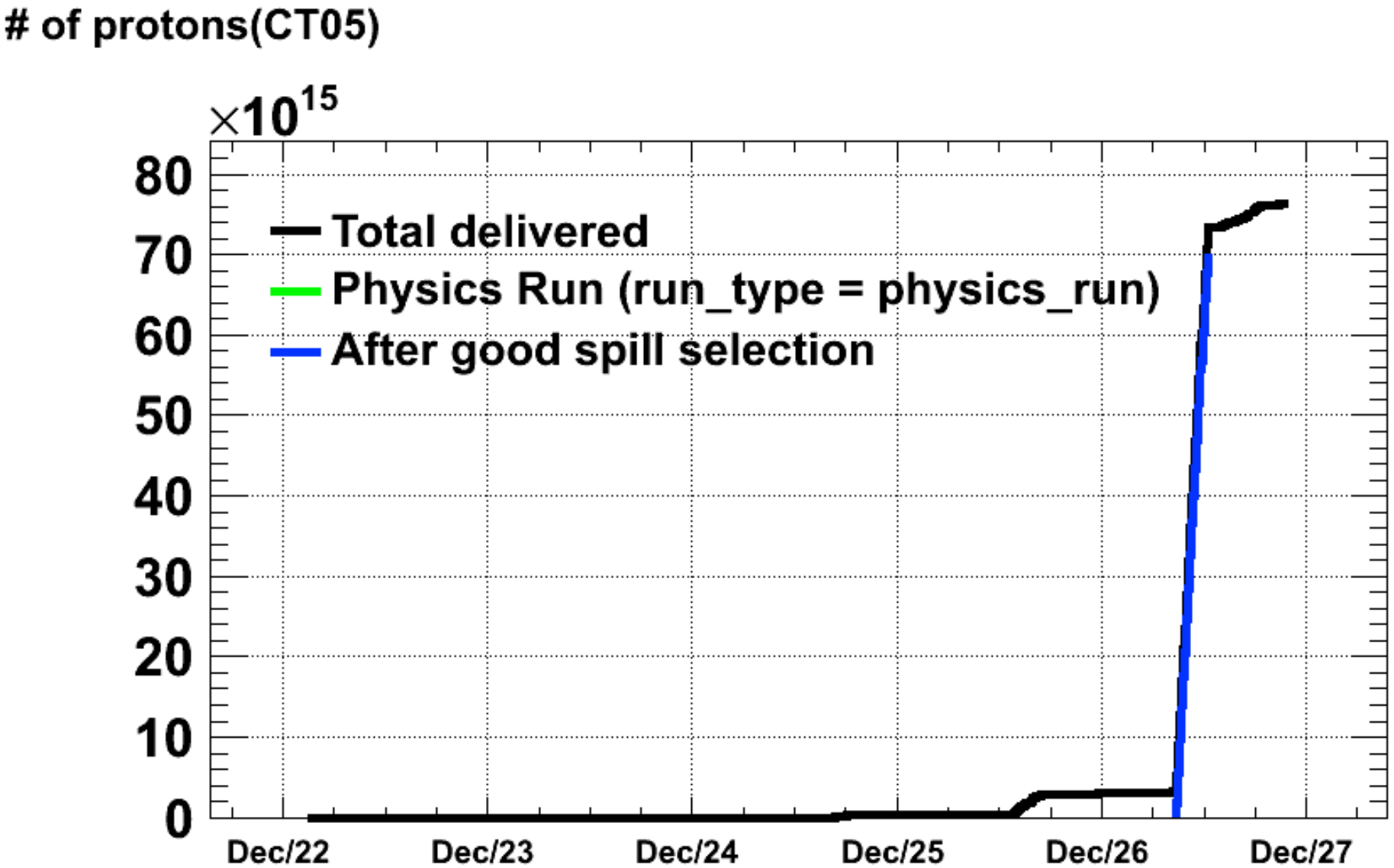
New nominal value for MUMON cut

Summary of 2011.12 continuous run

	# of spills	Ratio
All spills	3740	1
Beam trigger	3730	0.997
Good GPS	3730	0.997
ppp(CT5)>1e11	3721	0.995
Normal beam	3721	0.995
MUMON cut	3721	0.995

# of delivered protons(CT5) = 7.00e16

POT history in 2011.12



New definition of good spill flags

- MR Run <=38
  - Good spill -> flag = 1
- MR Run >= 39
  - Good spill -> flag = (Setting horn current)
  - If no horn operation, flag = 100