A Quick update

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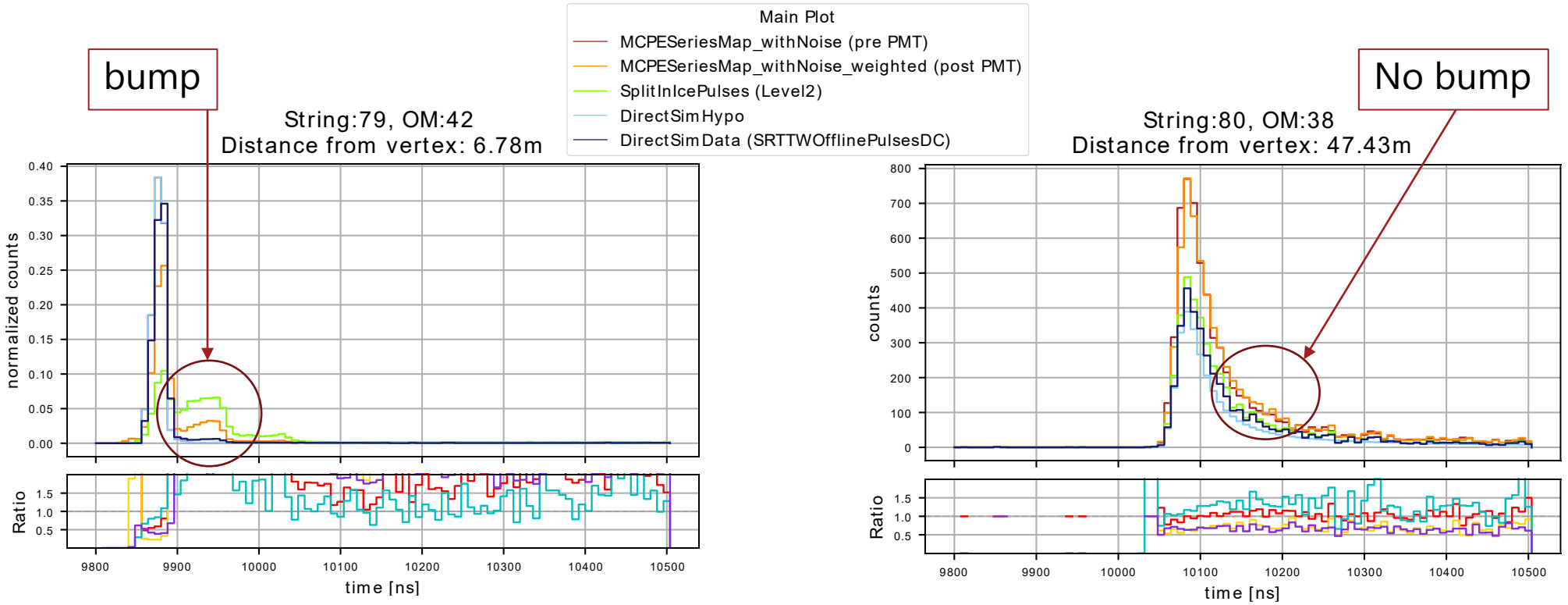
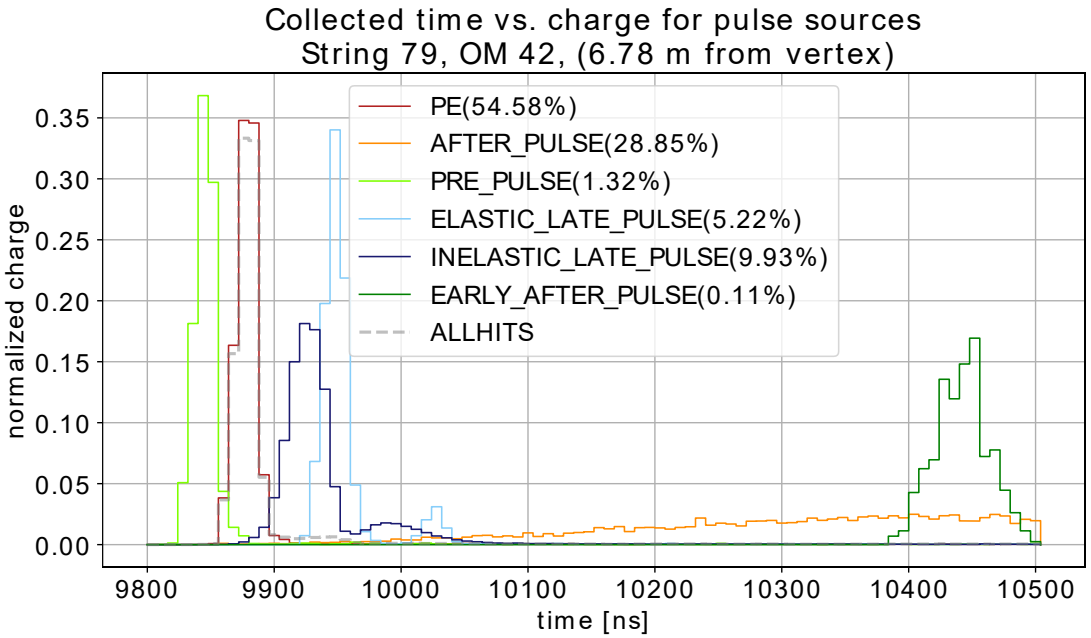
Issue at hand recap

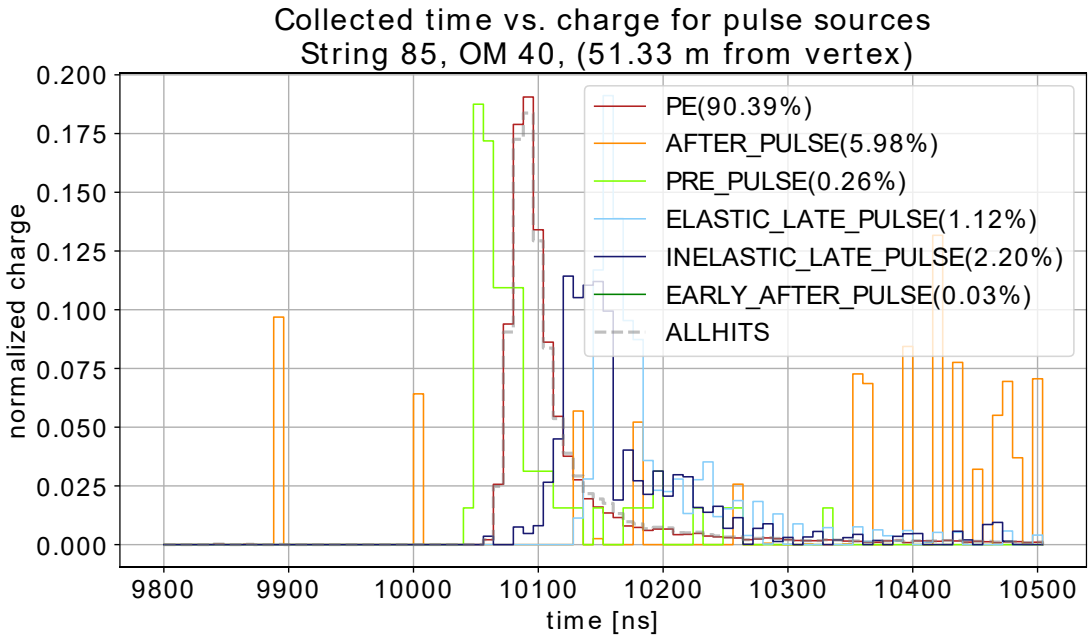
- We're seeing this "bump" feature in nearby Oms post PMT simulation.
- It's enhanced compared to DirectReco due to not using weighted binning, DirectReco uses charge instead of counts.



Extracting simulation features from PMT simulation

- There is a clear excess of some types of pulses in the nearby OM
- PMT simulation has:
  - Prob(PRE_PULSE) = 0.3 %
  - Prob(LATE_PULSE) = 3.5 %
  - Prob(AFTER_PULSE) = 5.93 %





What to do for now

- Currently running new MC with all other pulses that PE turned of

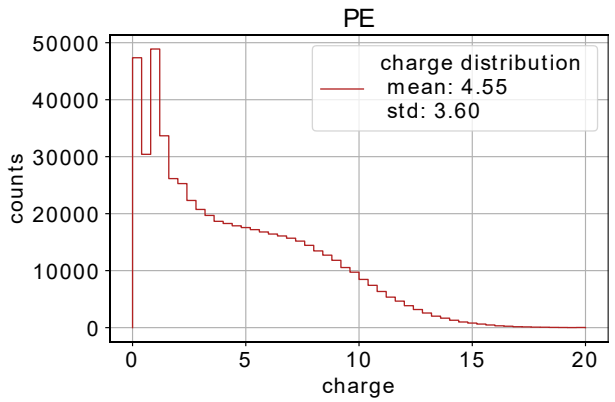
  Hopefully these results will be better than previously

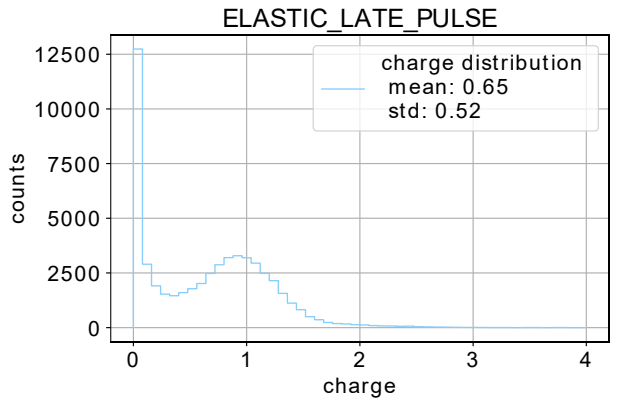
- Now focus is on SPE Templates and calculating the mean SPE charge for each OM. This is currently hardcoded as 0.86 (magic number). Looking into this with Jonathan

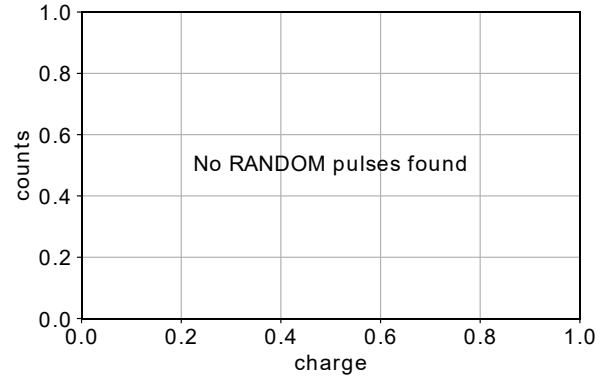
- Will at some point later dig into the excess of late and after pulses ect. In the nearby Oms to figure out what causes said excess

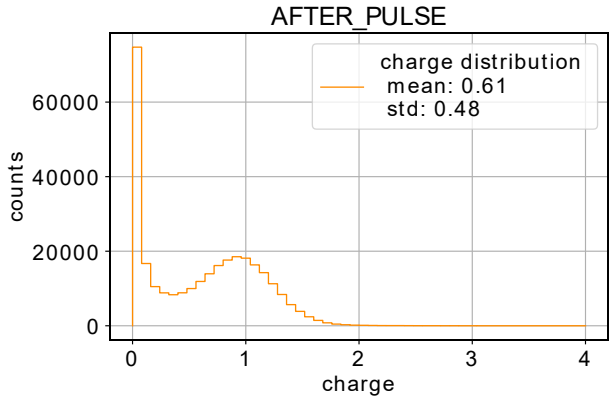
Bonus Slides

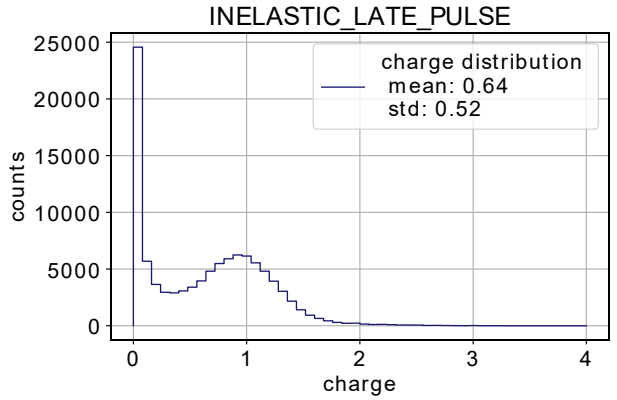
Seperate charge distributions for pulse sources
String 79, OM 42, (6.78 m from vertex)

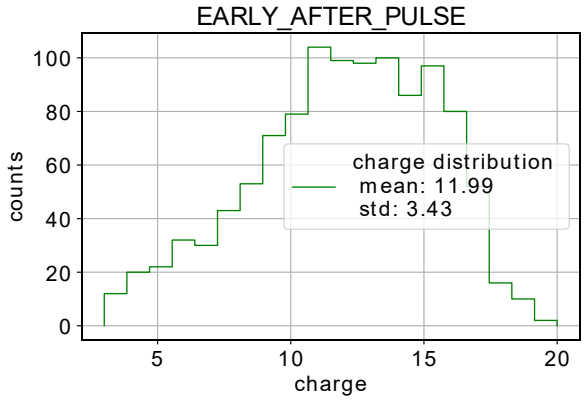


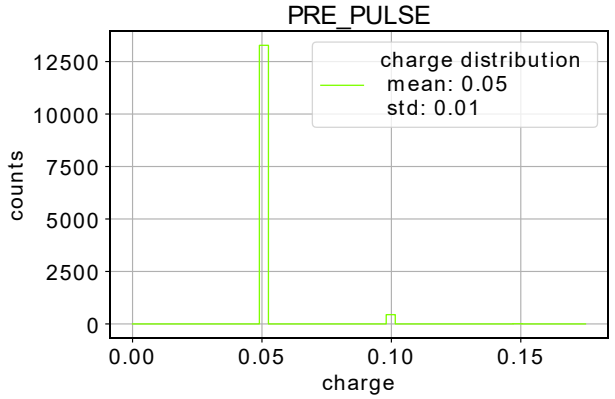


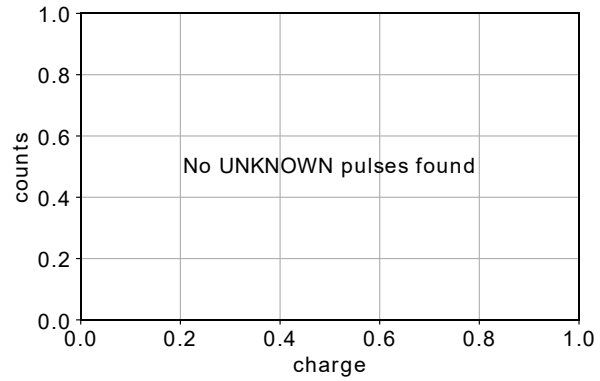


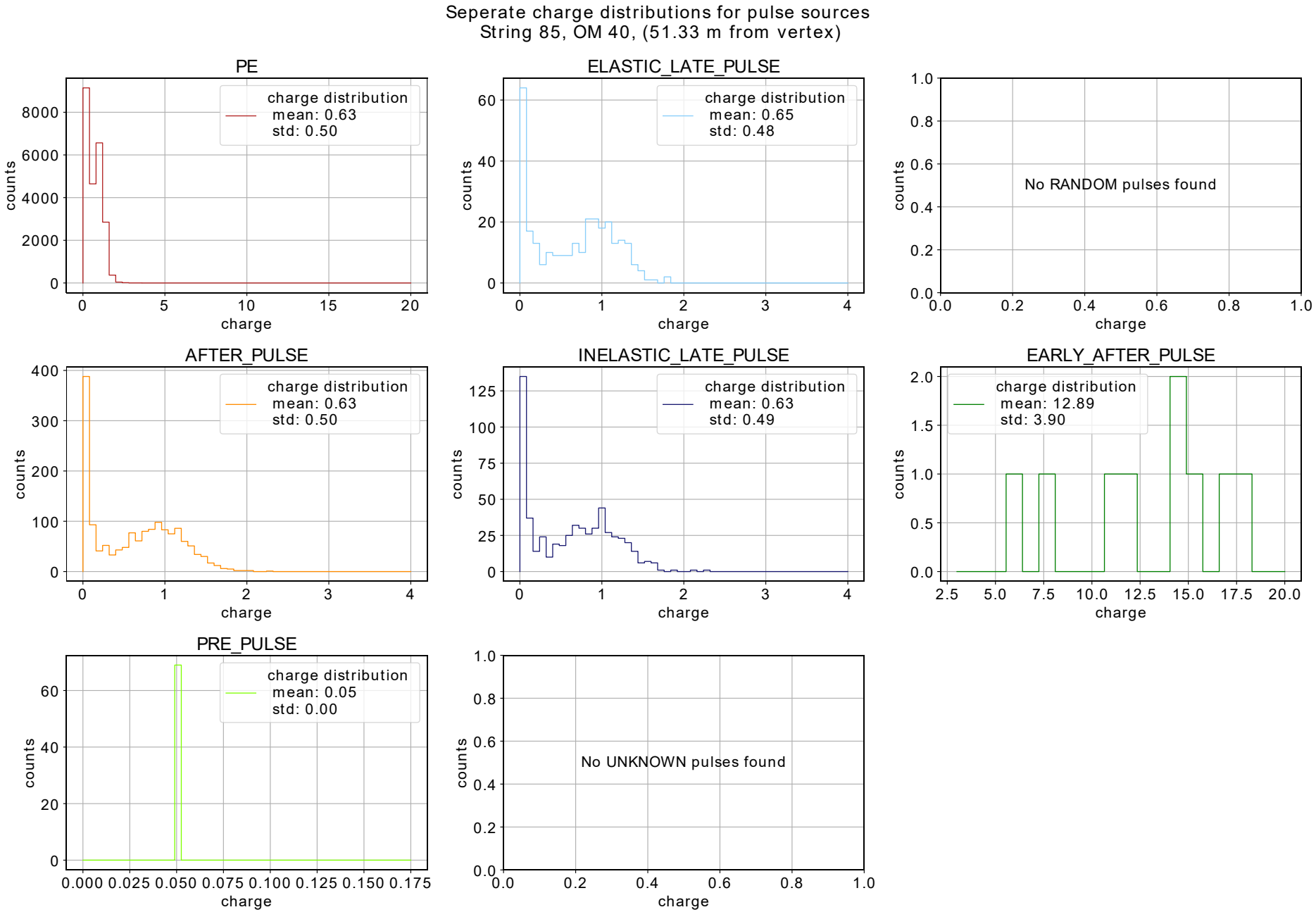











Seperate charge distributions for pulse sources
String 85, OM 40, (51.33 m from vertex)
PE
charge distribution
mean: 0.63
std: 0.50
ELASTIC_LATE_PULSE
charge distribution
mean: 0.65
std: 0.48
No RANDOM pulses found
AFTER_PULSE
charge distribution
mean: 0.63
std: 0.50
INELASTIC_LATE_PULSE
charge distribution
mean: 0.63
std: 0.49
EARLY_AFTER_PULSE
charge distribution
mean: 12.89
std: 3.90
PRE_PULSE
charge distribution
mean: 0.05
std: 0.00
No UNKNOWN pulses found
counts
charge