WCD independent SSD online calibration

Name 1*, Name 2, Name 3

Outline

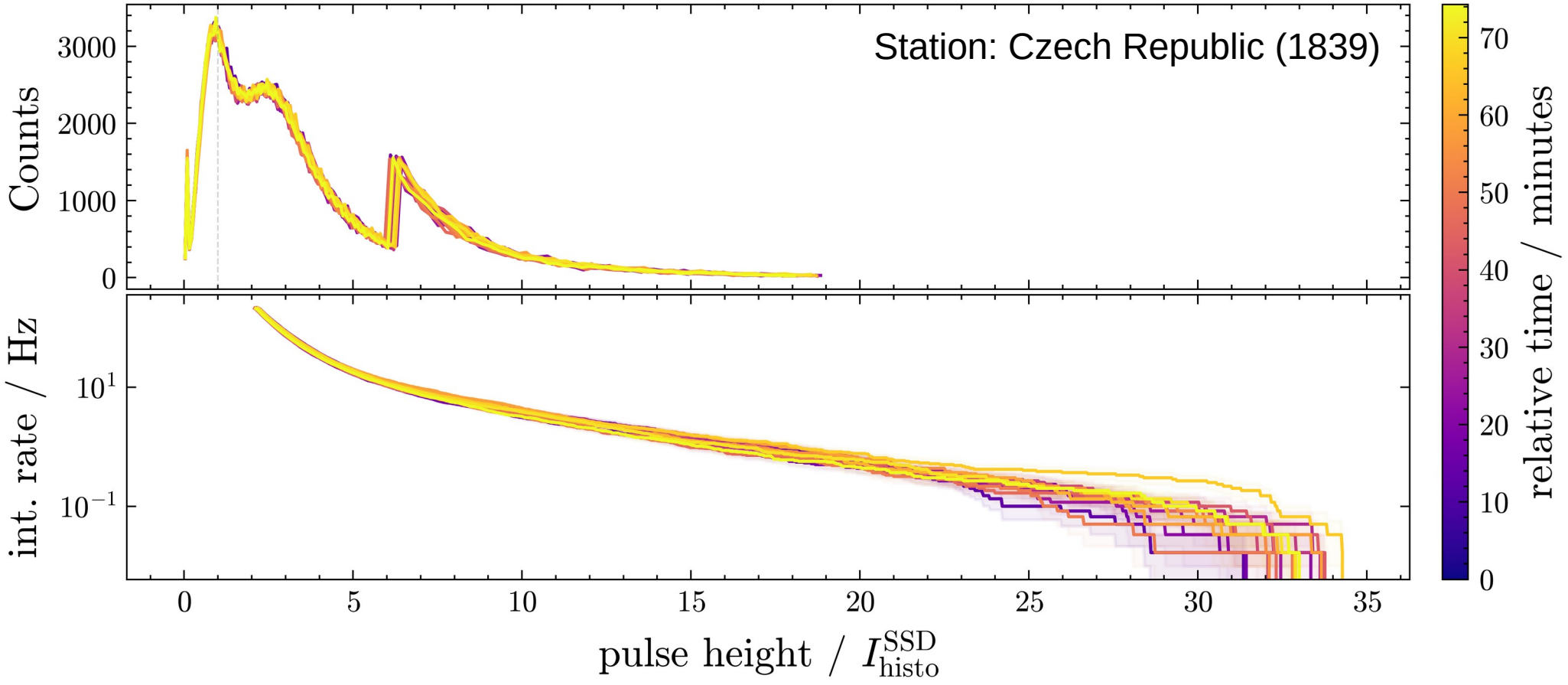
- Introduction
- First point
  - Discussion
- Second point
- Summary and outlook

muonAcquisition in Malargue

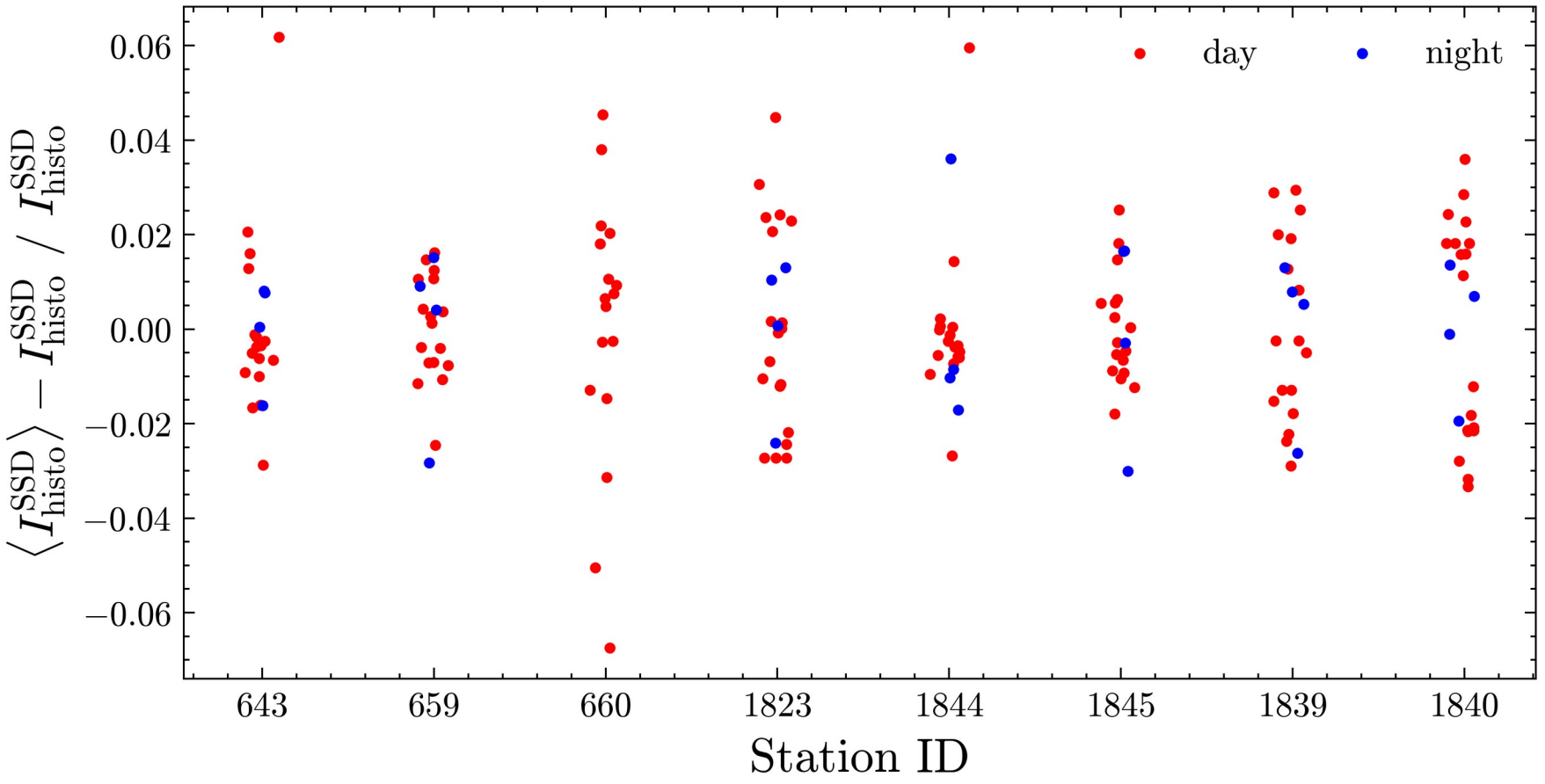
- Connect 8 Infill stations to separate CDAS instance
- Raise some standard muon histograms via forced T3
- Run special program on individual stations
  - Enable 2nd trigger mode (SSD only) on FPGA
  - Read out “standard” muon histogram
  - Save SSD only pulse-height histogram

- Use SSD only pulse-height histogram to construct rate/threshold relationship used for SSD online calibration

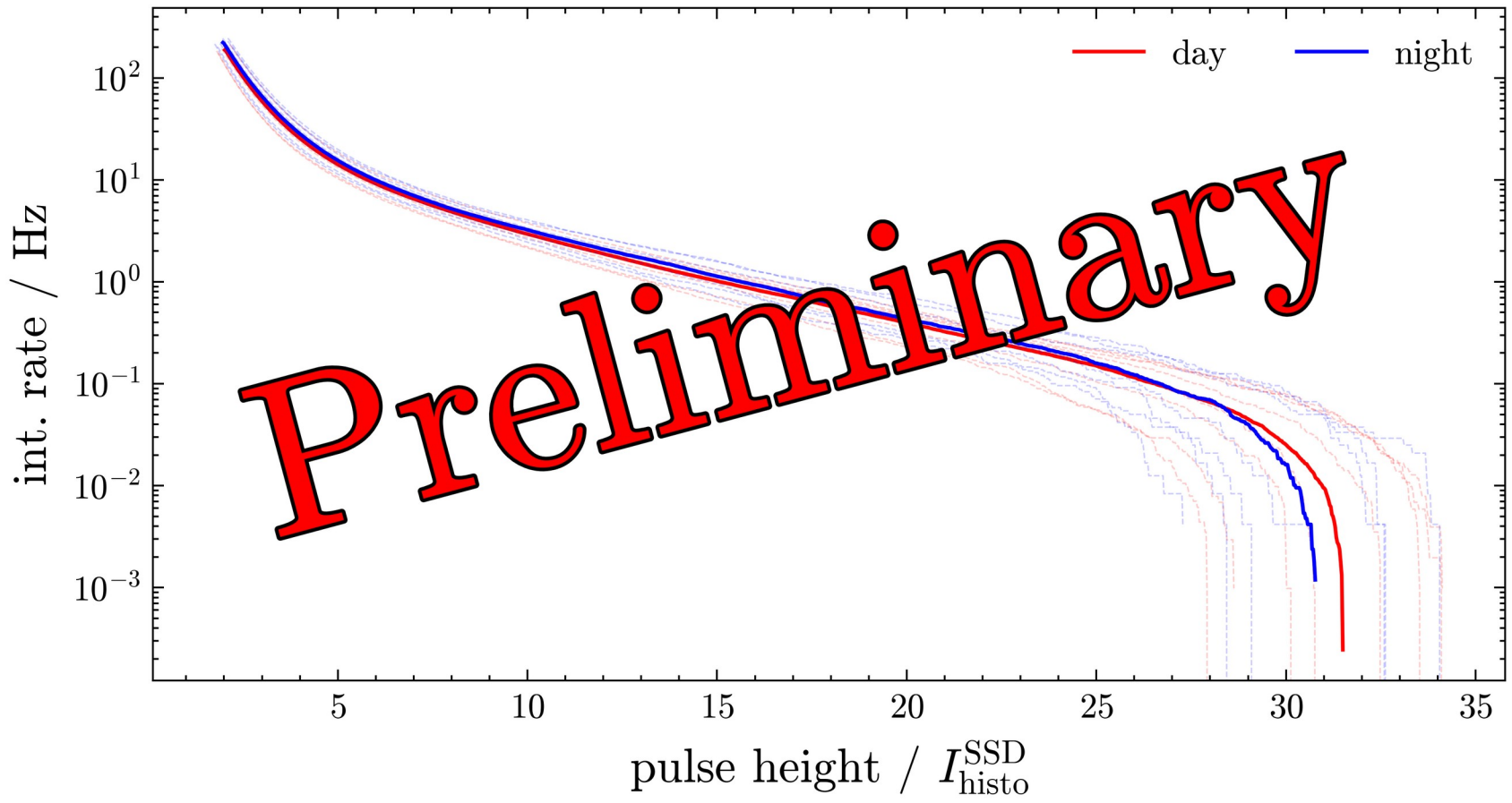
WCD dependent hist and integral rate



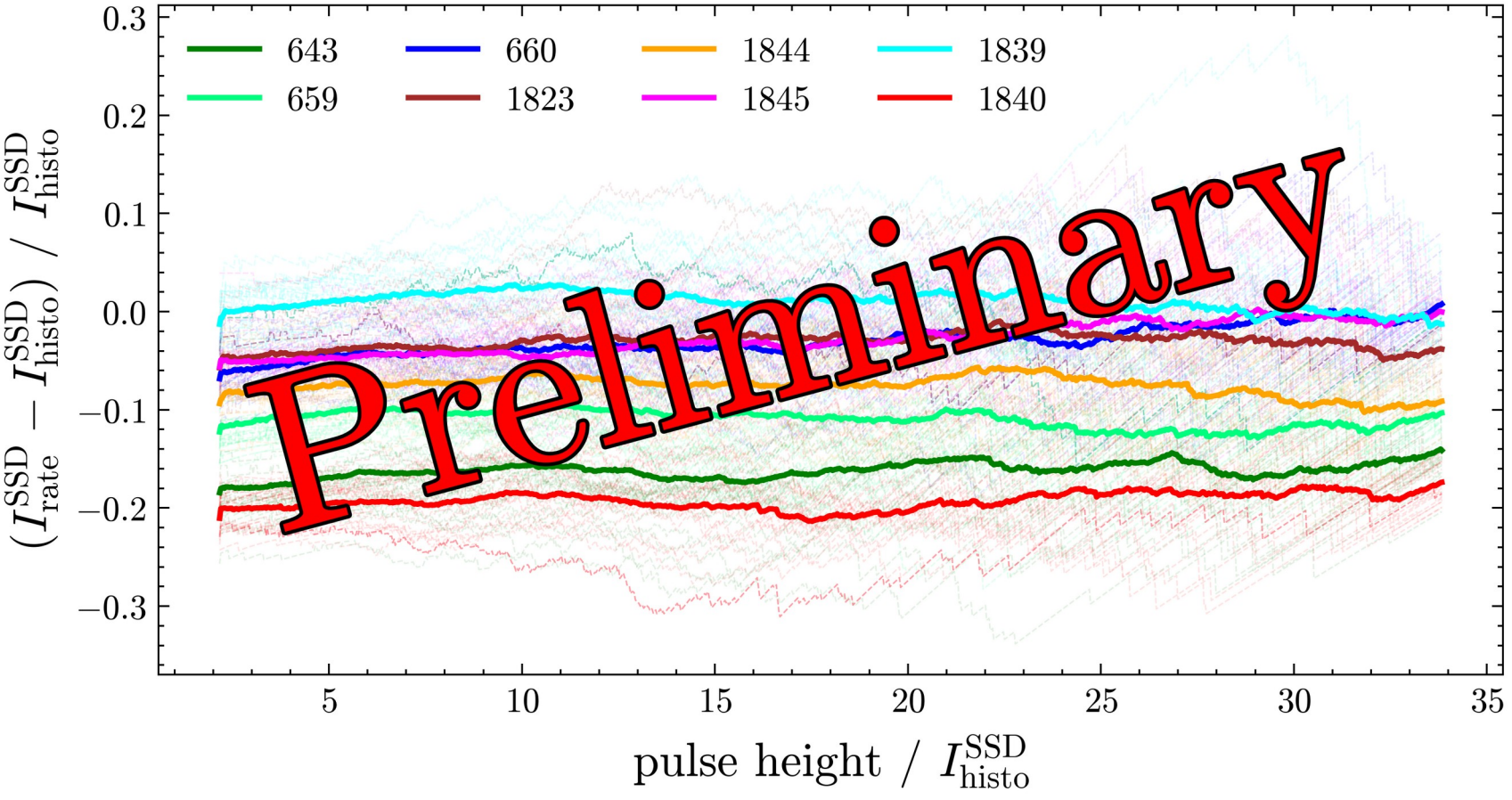
Minute-minute stability



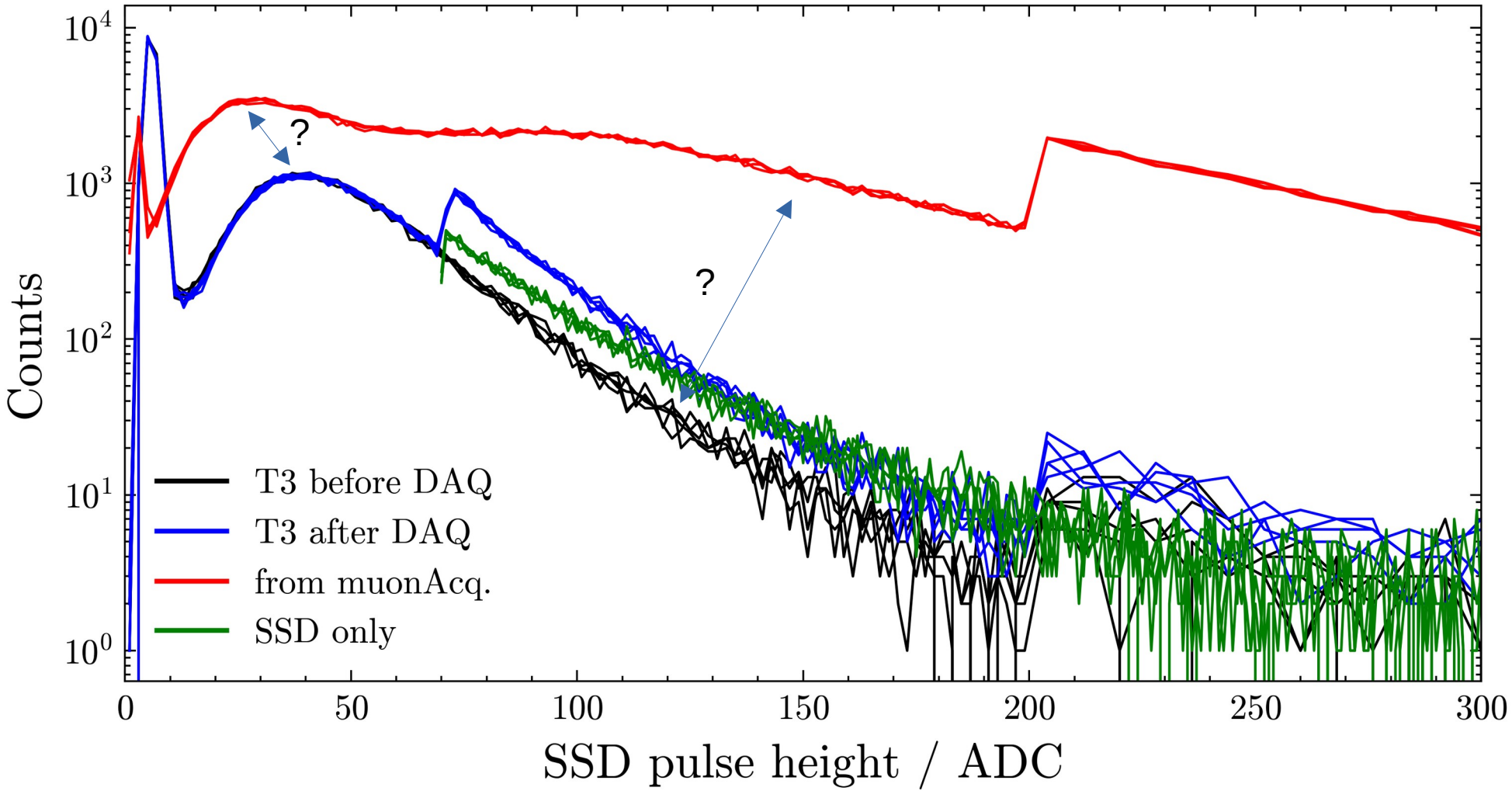
Rate-threshold relationship



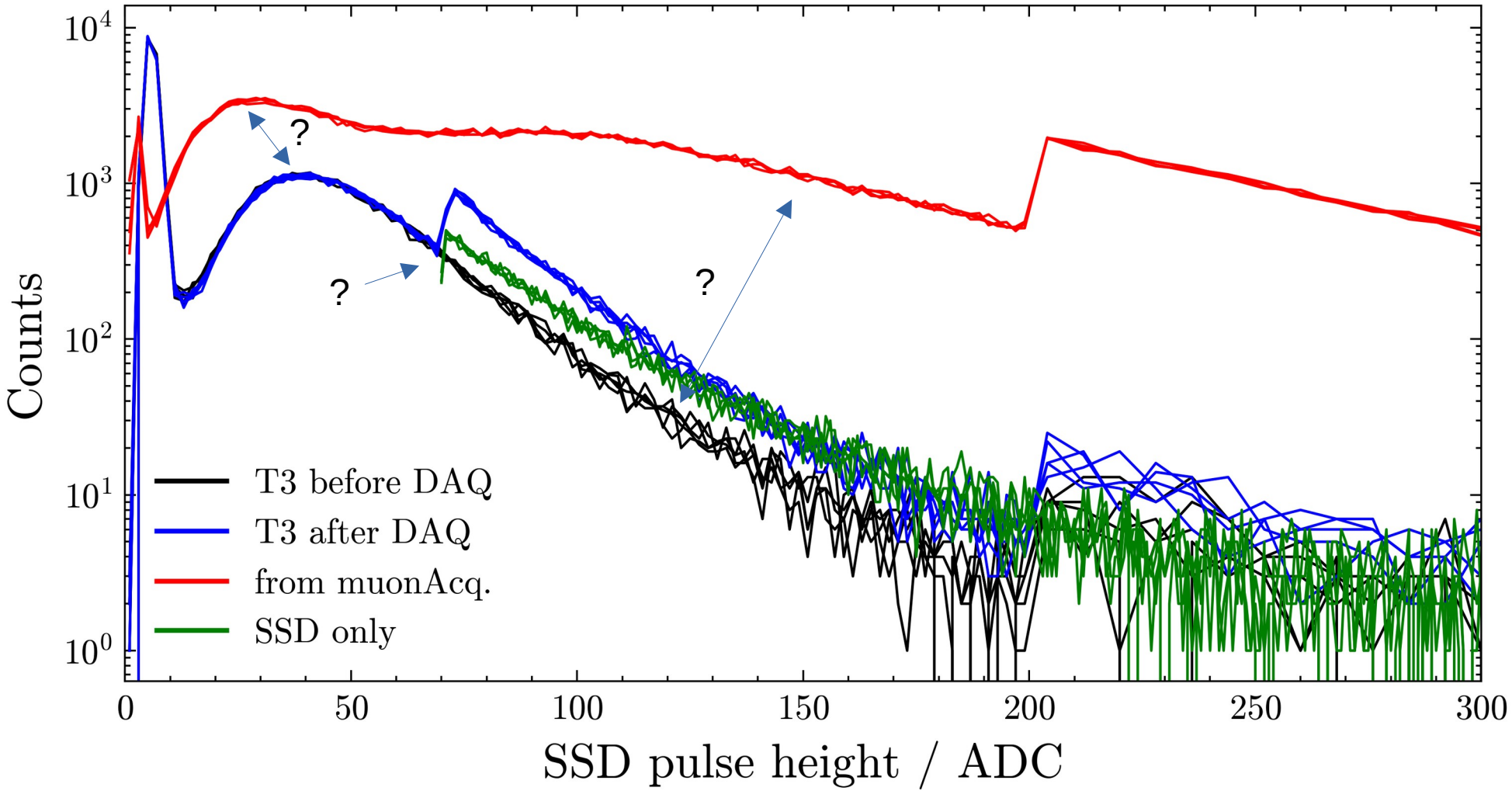
Bias resolution - WCD independent



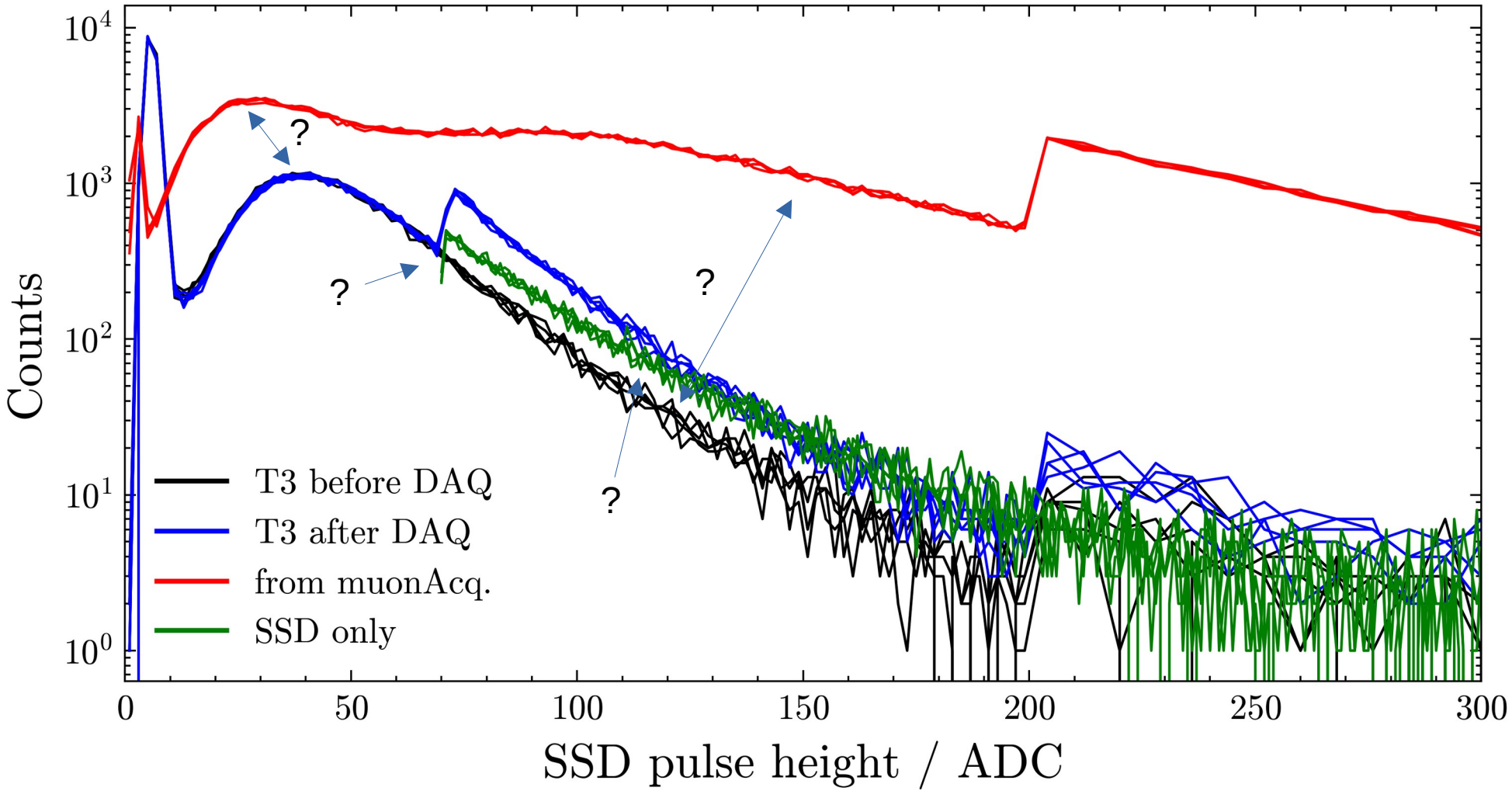
Sanity checkes on histograms



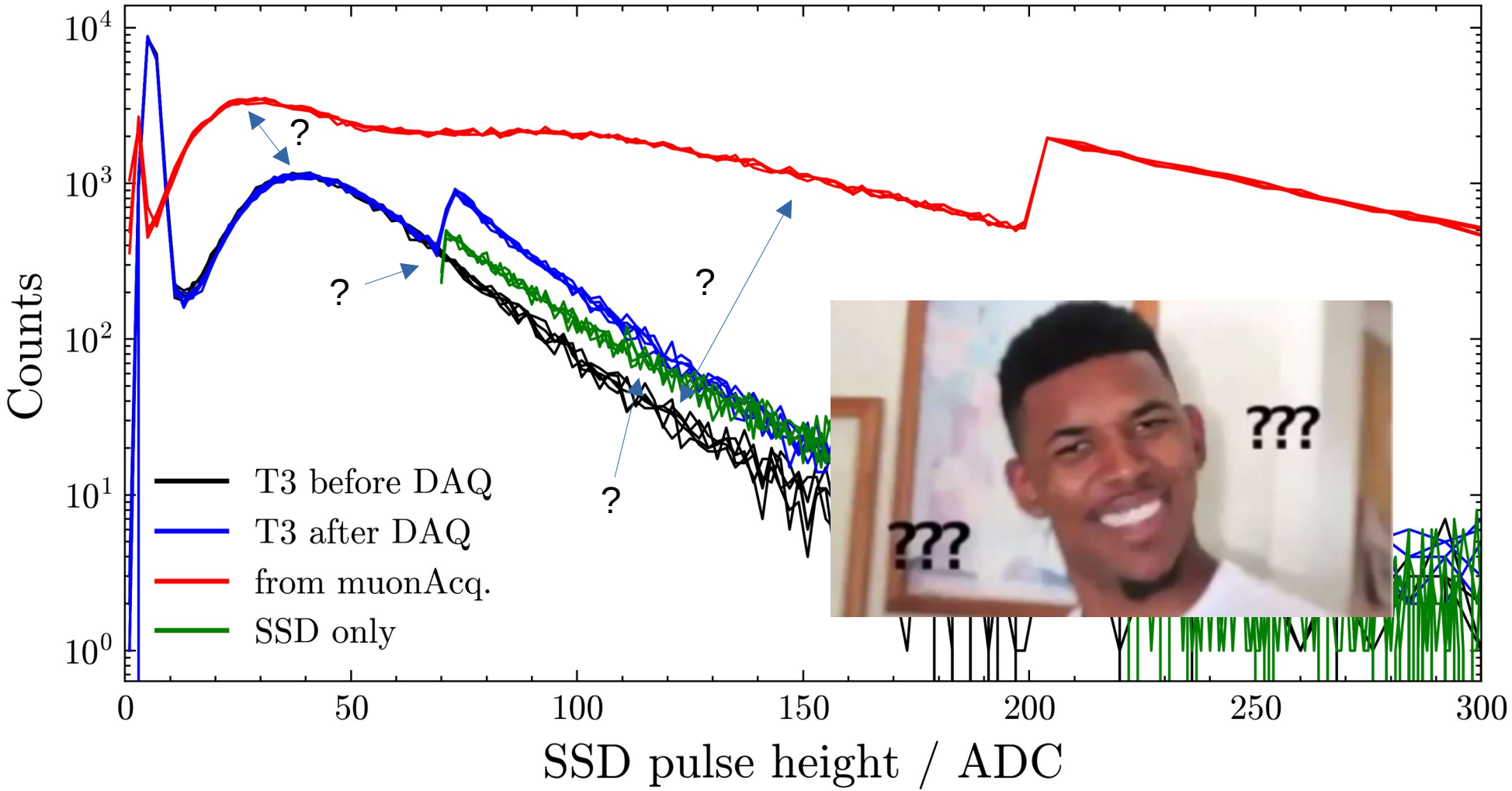
Sanity checkes on histograms



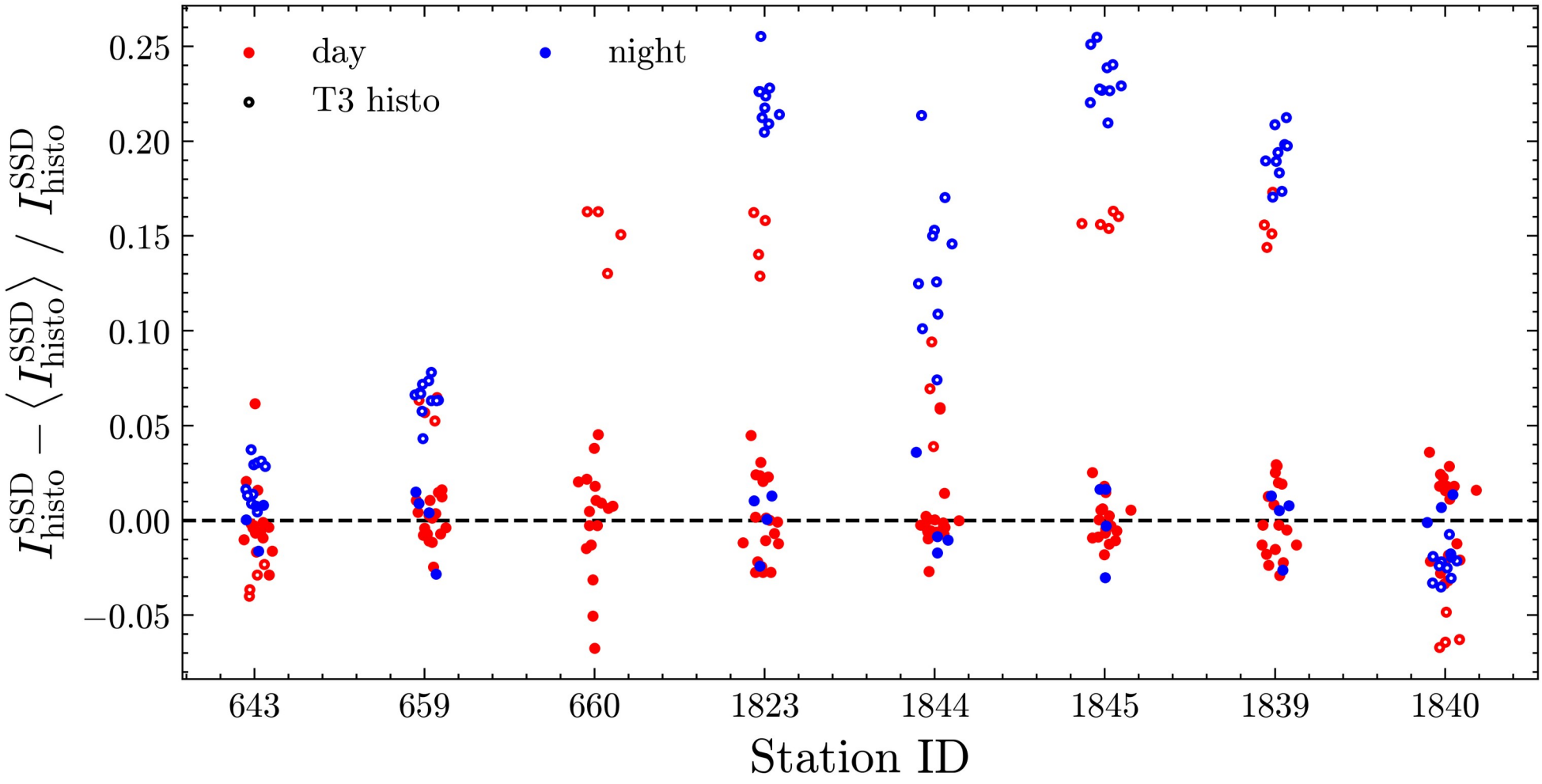
Sanity checkes on histograms



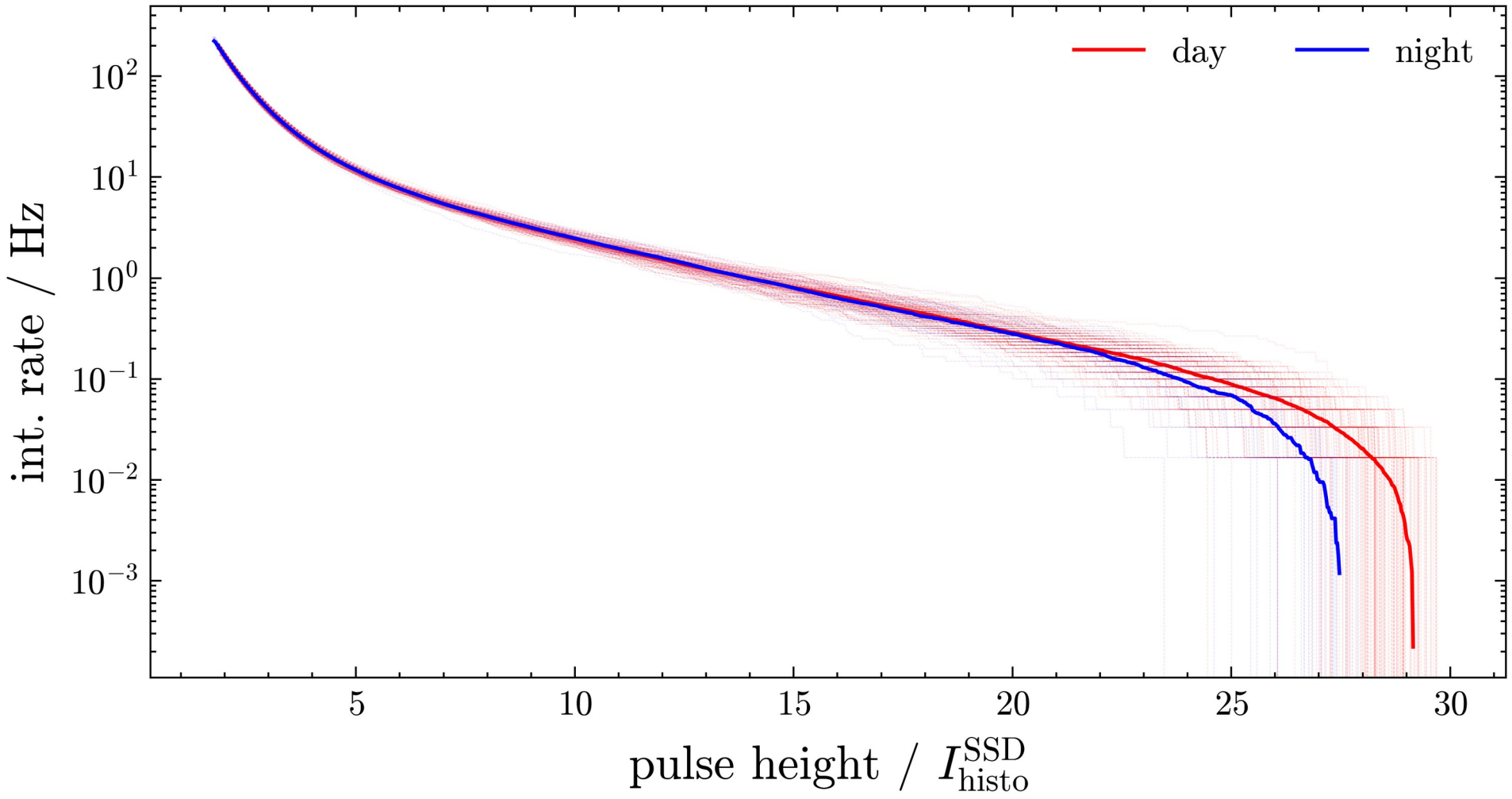
Sanity checkes on histograms



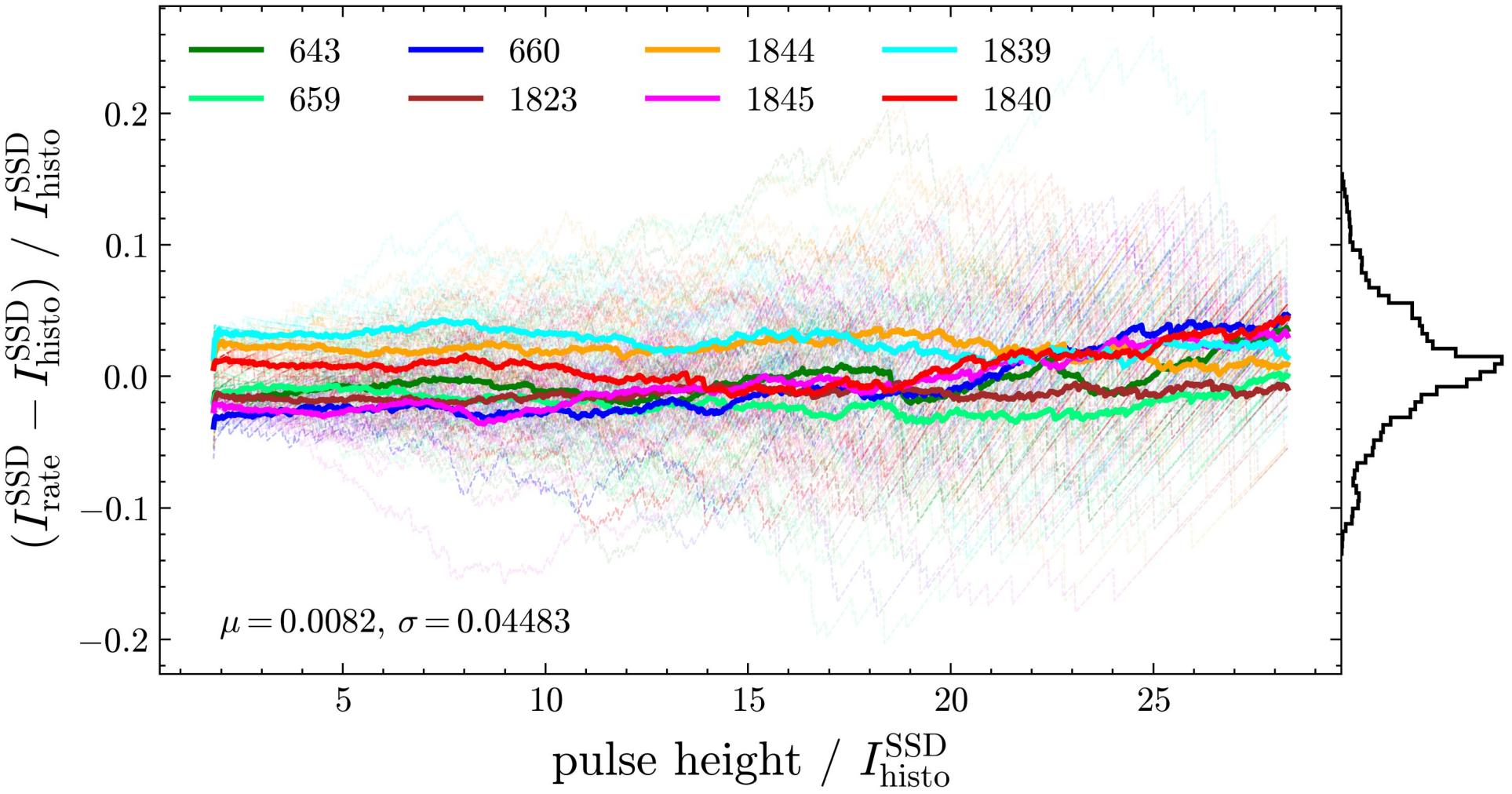
Station-dependent biases



Using T3 muon histogram for ‘online calib’



Using T3 histograms for ‘online calib’



Summary & outlook

- muonAcquisition in the week after March meeting
- raise special calib. histograms from several Infill stations
- coincidence histograms from muonAcquisition not fully understood yet, lack explanation for histogram offest
- mean bias resolution ~5%, very promising for **WCD independent** rate-based SSD online calibration
- Dig into station software to implement prototype