UUB Charge and Peak histograms

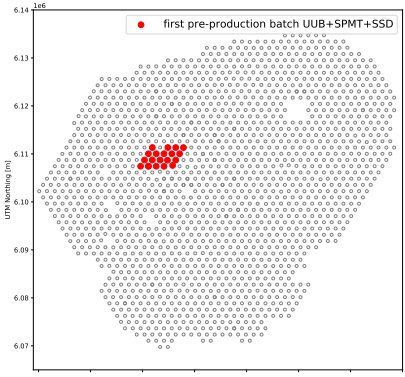
Mauricio Suárez Durán and Ioana C. Mariș

IIHE-ULB

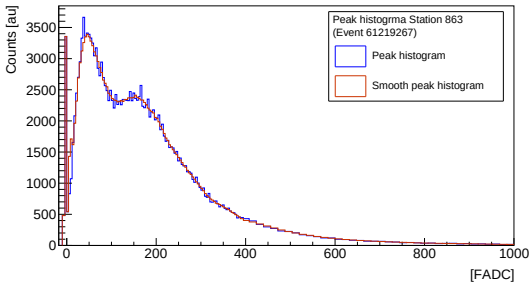
July 8, 2021

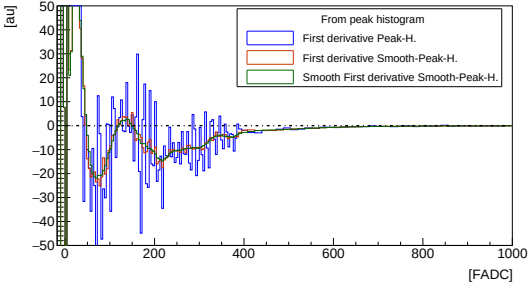
UUB Charge and Peak histograms

- Station studied: 863 1222 1219 1211 1740 1743 1221 1223 1217 1747 1741 1745 1818 1851 1729 1735 1746 1819 1791
- Data from CDAS.
- Software CDAS, pre-production version.



UUB Peak: Derivating histogram

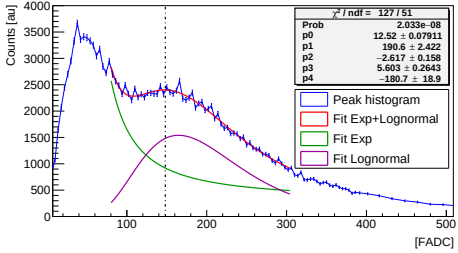


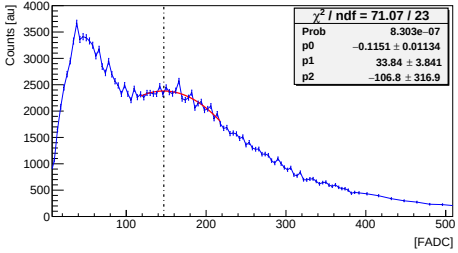


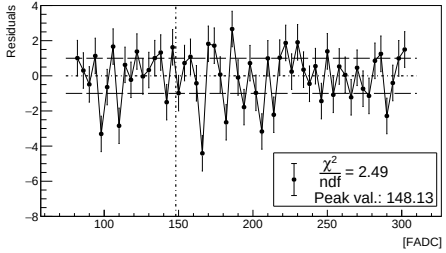
The algorithm: 1. Smooth Histogram
2. Derivating of smooth Histogram
3. Identifing Fit range (Slope changes)
4. Fitting

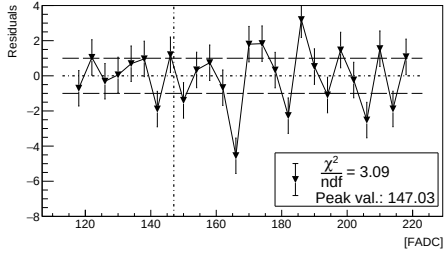
Two function checked:
- Exp. + Log-normal
- 2nd order polinomium

UUB Peak: Fit and Residuals

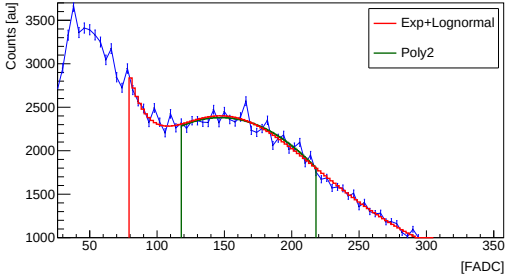


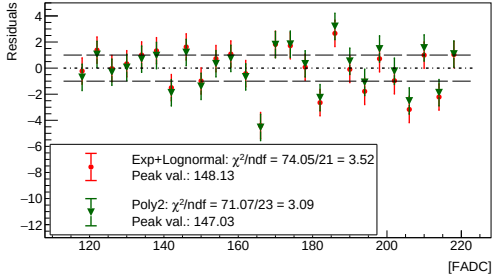


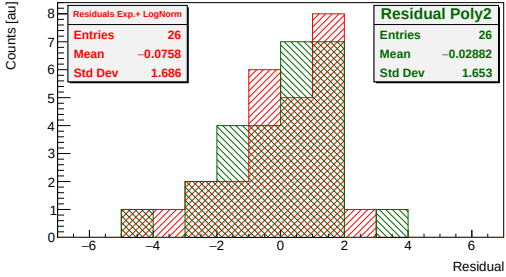




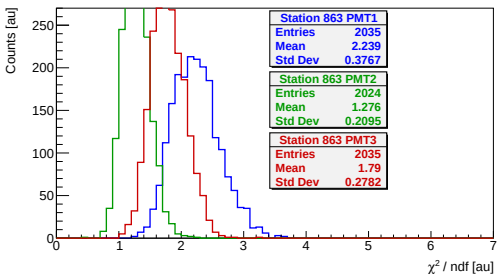
UUB Peak: Comparison Fit and Residuals

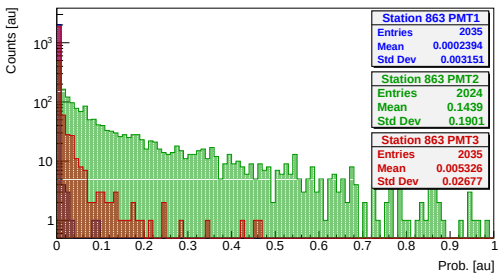




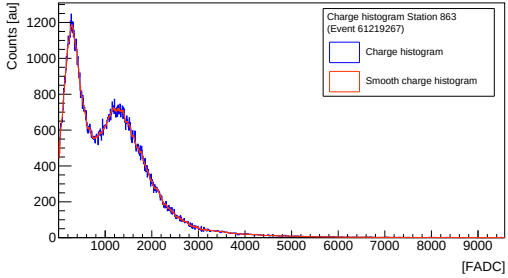


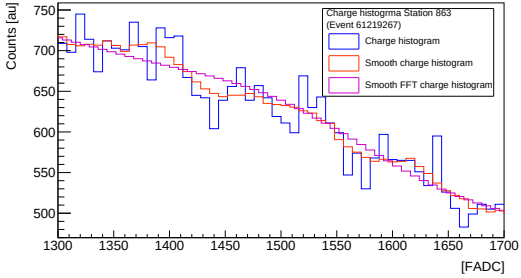
UUB Peak: applying all histograms St. 863, Chi and Prob. distributions

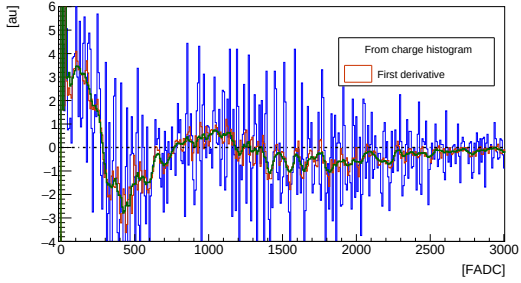


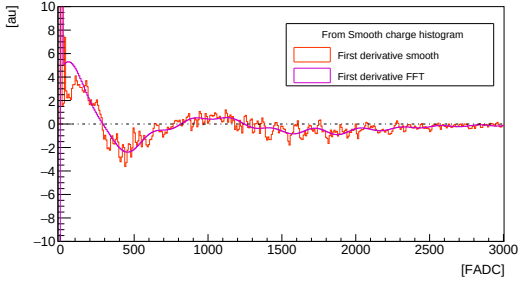


UUB Charge: Derivating histogram

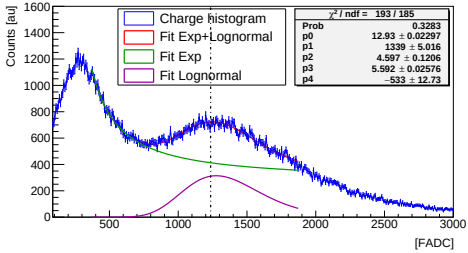


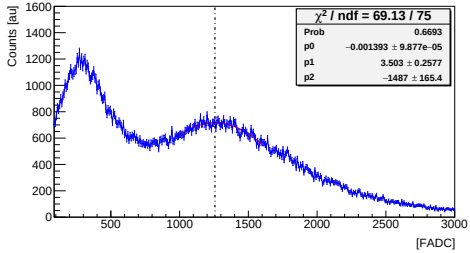


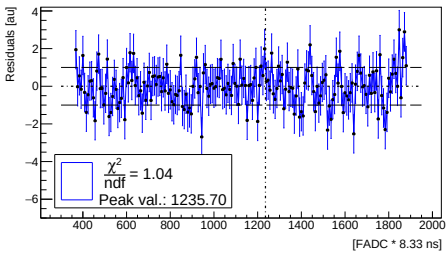


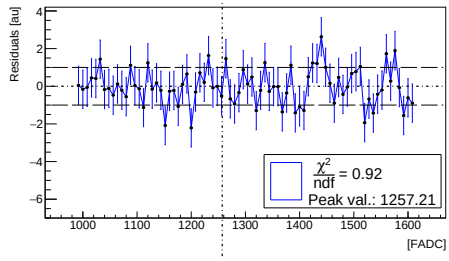


UUB Charge: Fit and Residuals



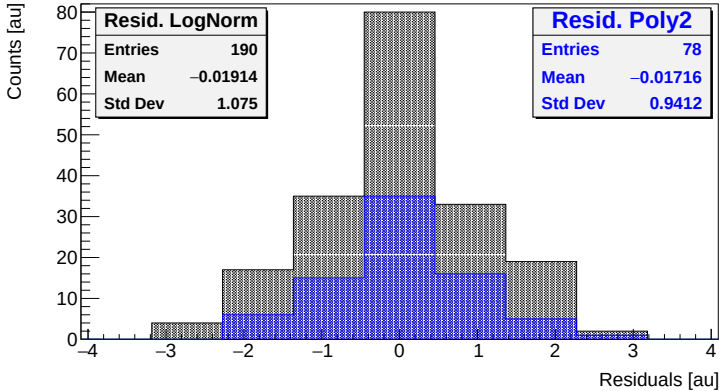




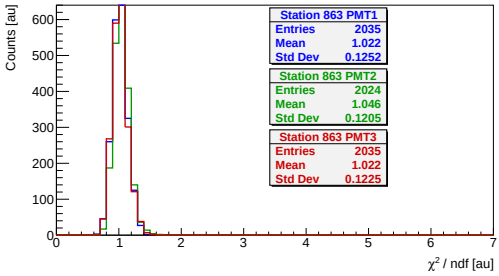


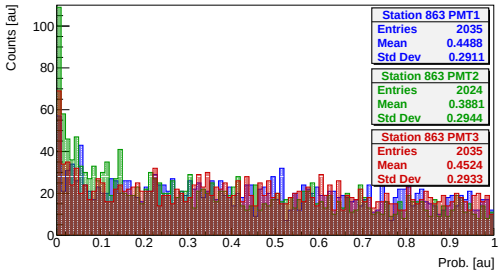
The Exp.+Log-normal fit better than second order polinomium.

UUB Charge: Residuals distribution

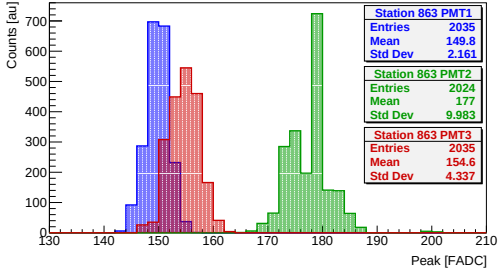


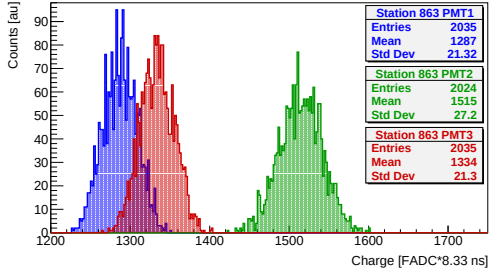
UUB Charge: applying all histograms St. 863, Chi and Prob. distributions

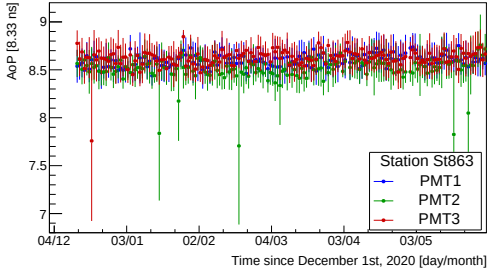




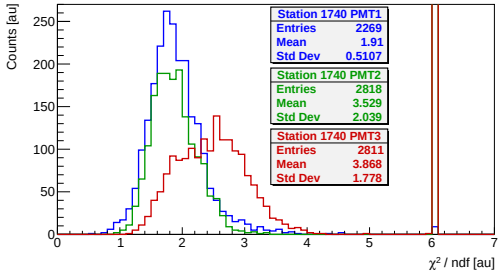
UUB AoP Station 863: Peak, Charge and AoP

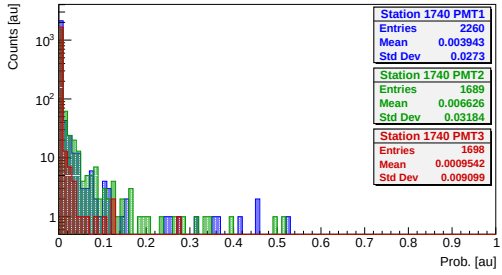






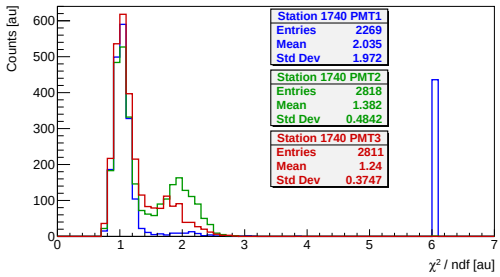
UUB Peak Station 1740: Chi and Prob. distributions all histograms

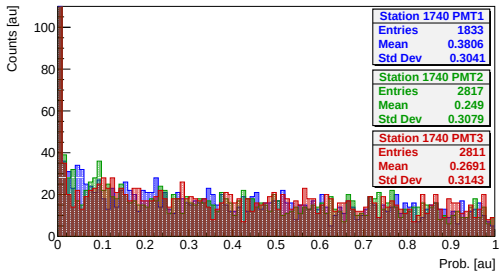




For χ^2/ndf plot, all histograms with χ^2/ndf bigger than 6 are counted as 6.

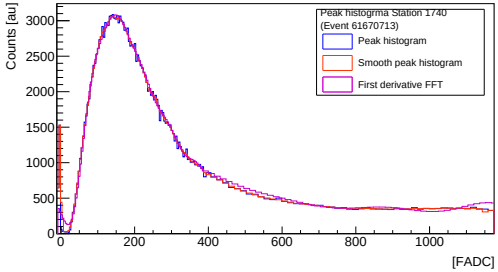
UUB Charge Station 1740: Chi and Prob. distributions all histograms

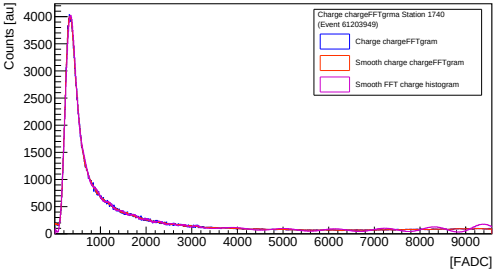


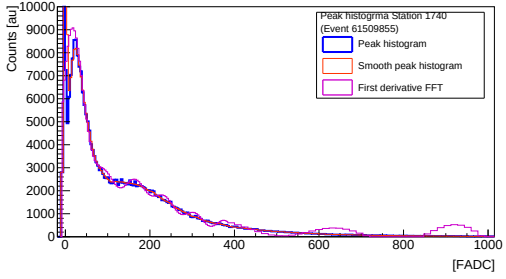


For χ^2/ndf plot, all histograms with χ^2/ndf bigger than 6 are counted as 6.

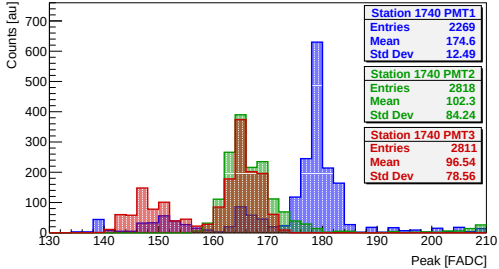
UUB Station 1740: Failed fit

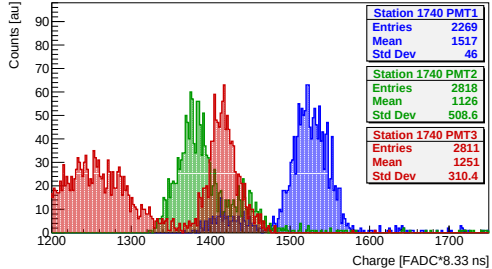


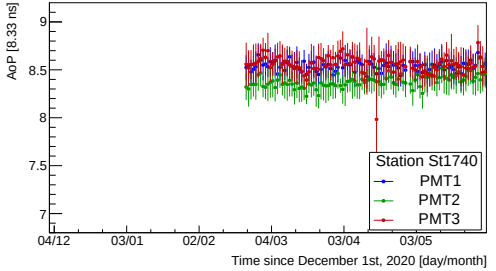




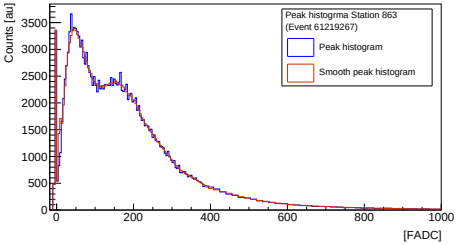
UUB AoP Station 1740: Peak, Charge and AoP

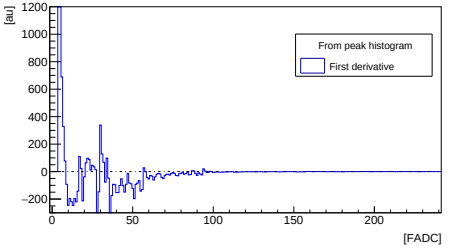






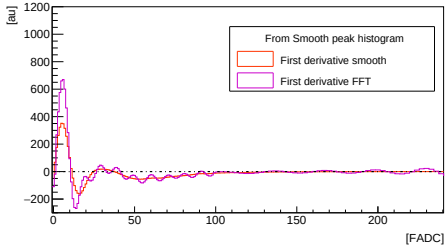
UB Peak: Derivating histogram



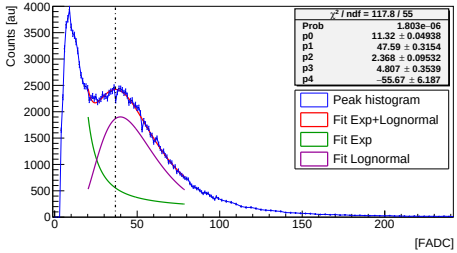


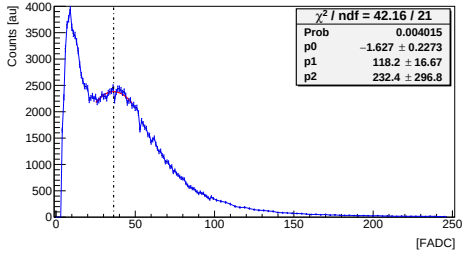
The algorithm: 1. Smooth/FFT Histogram
2. Derivating of smooth/FFT Histogram
3. Identifing Fit range (Slope changes)
4. Fitting

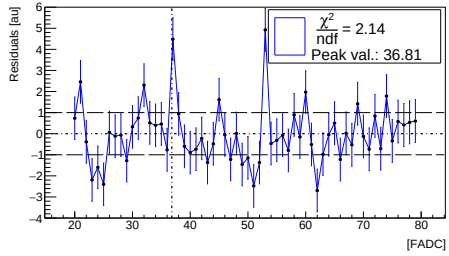
Two function checked:
- Exp. + Log-normal
- 2nd order polinomium

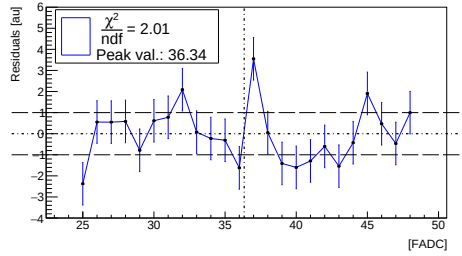


UB Peak: Fit and Residuals



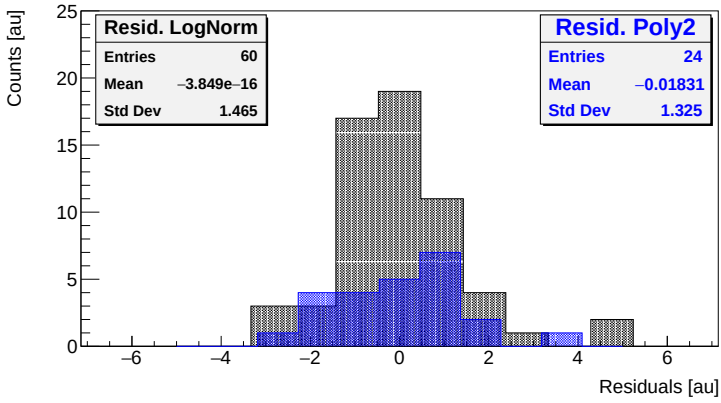




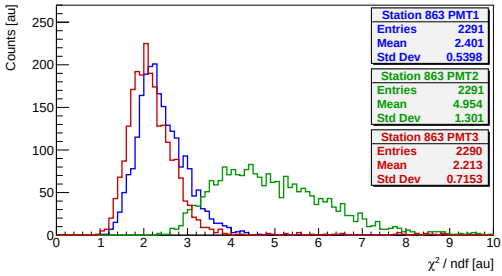


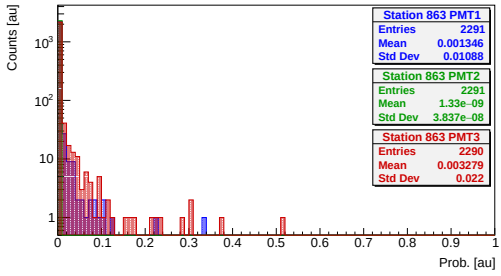
The Exp.+Log-normal fit better than second order polinomium.

UB Peak: Residuals distribution

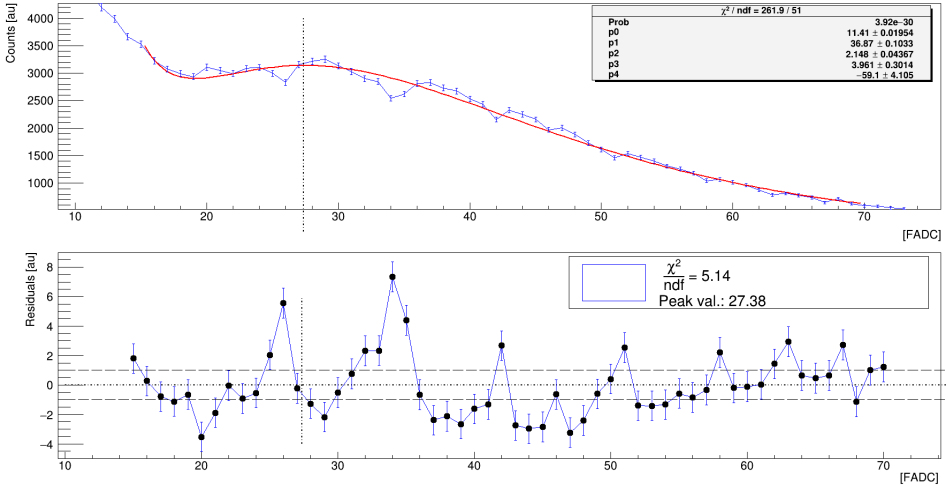


UB Peak: applying all histograms St. 863, Chi and Prob. distributions

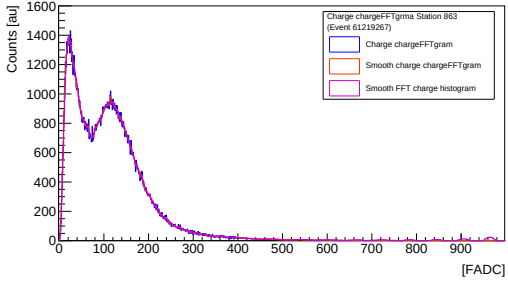


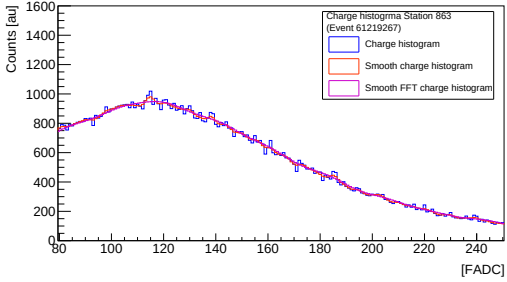


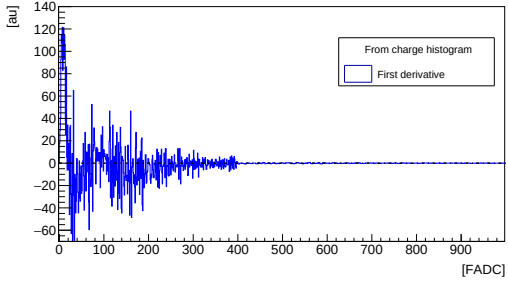
UB Peak Station 863: Failed fit for PMT2

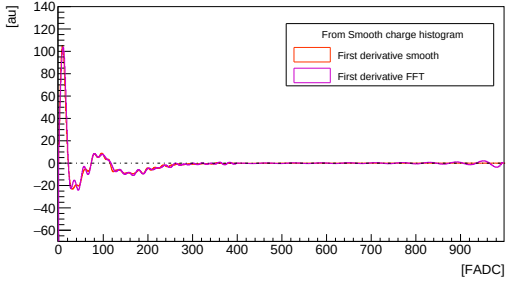


UB Charge: Derivating histogram

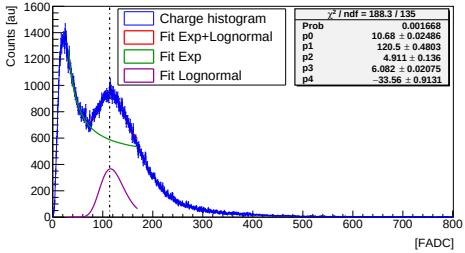


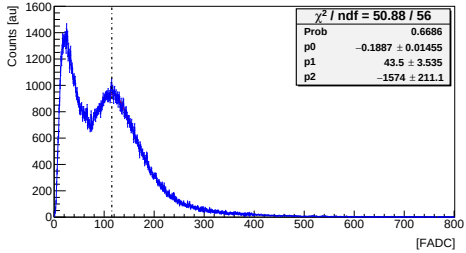


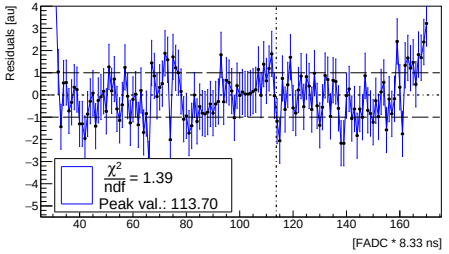


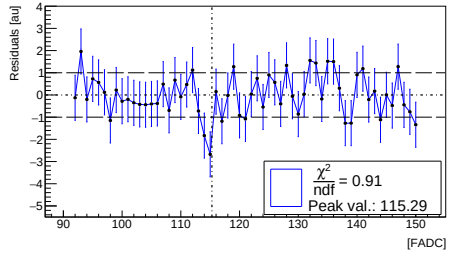


UB Charge: Fit and Residuals



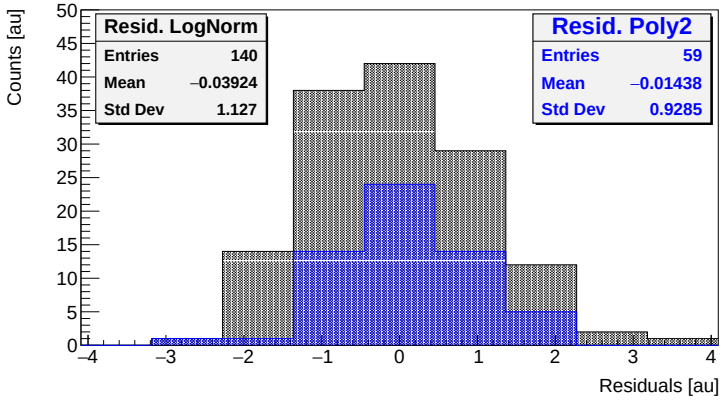




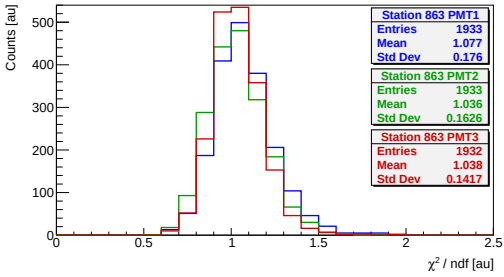


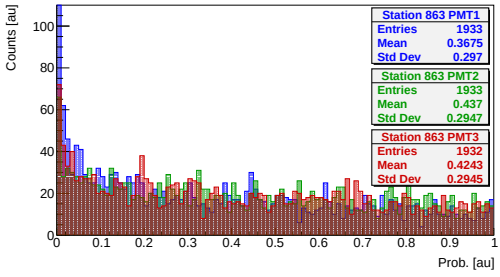
The Exp.+Log-normal fit better than second order polinomium.

UB Charge: Residuals distribution

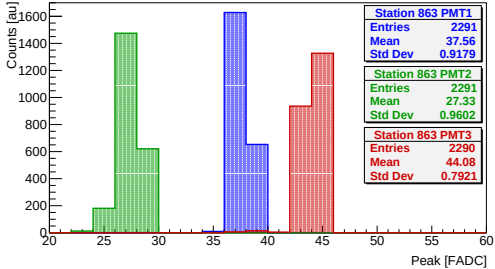


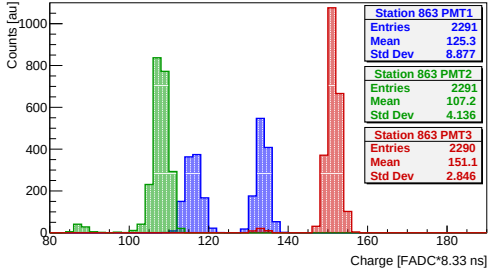
UB Charge: applying all histograms St. 863, Chi and Prob. distributions

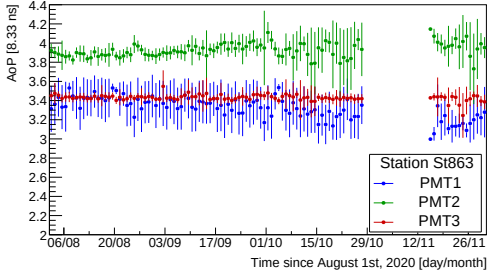




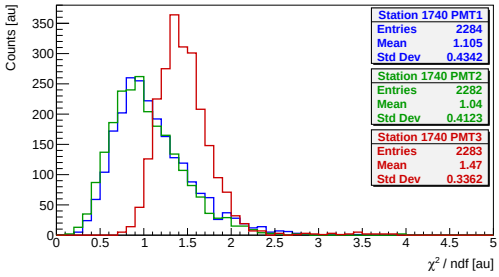
UB AoP Station 863: Peak, Charge and AoP

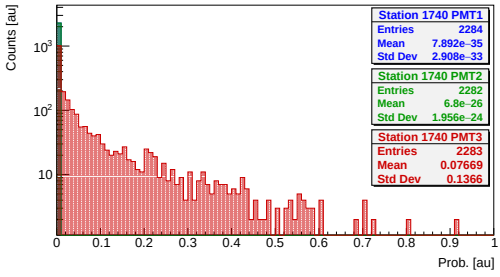




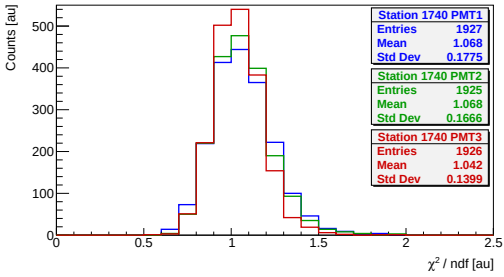


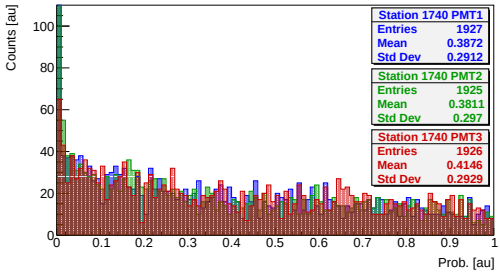
UB Peak Station 1740: Chi and Prob. distributions all histograms



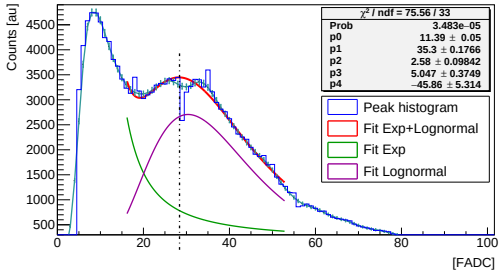


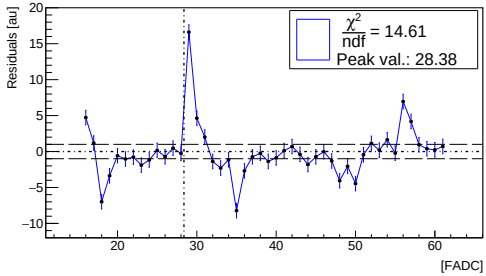
UB Charge Station 1740: Chi and Prob. distributions all histograms

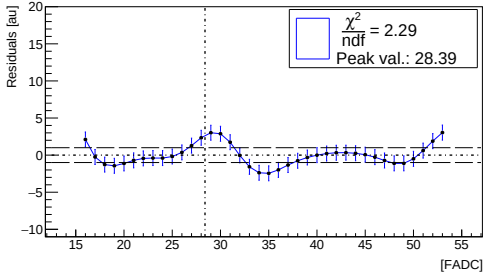




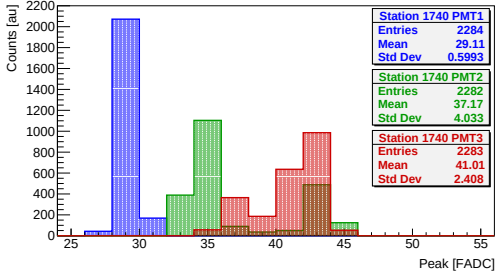
UB Station 1740: Failed fit

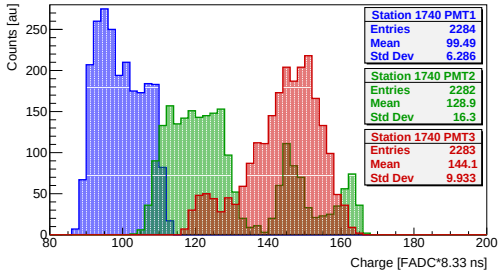


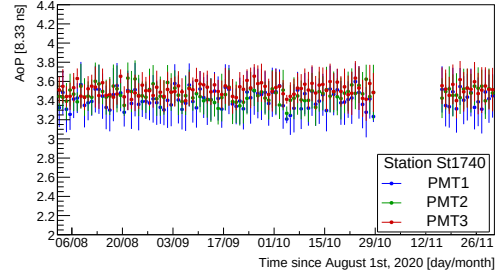




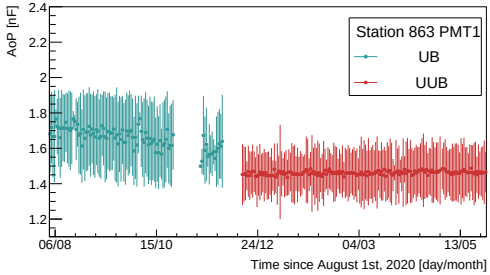
UB AoP Station 1740: Peak, Charge and AoP

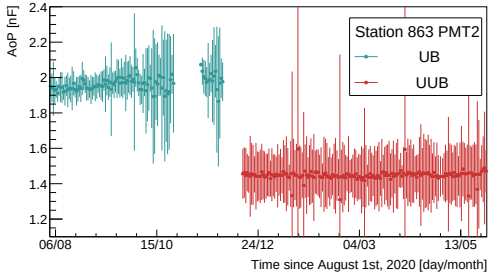


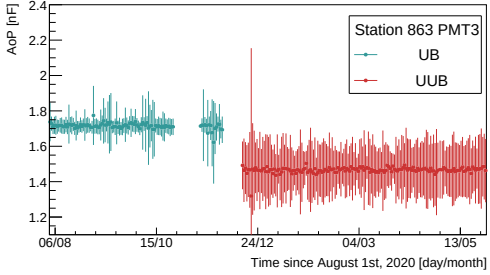
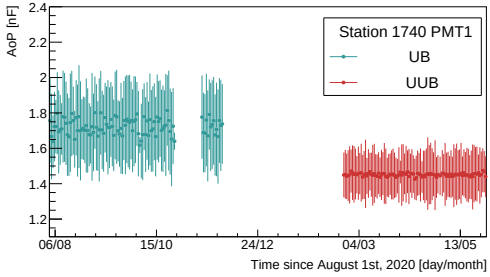
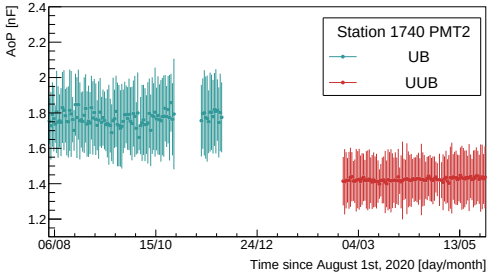
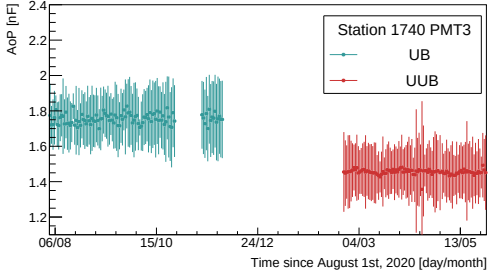




AoP UB and UUB: Station 863







AoP UB and UUB: Station 1740