

T2Dumps: Time Differences

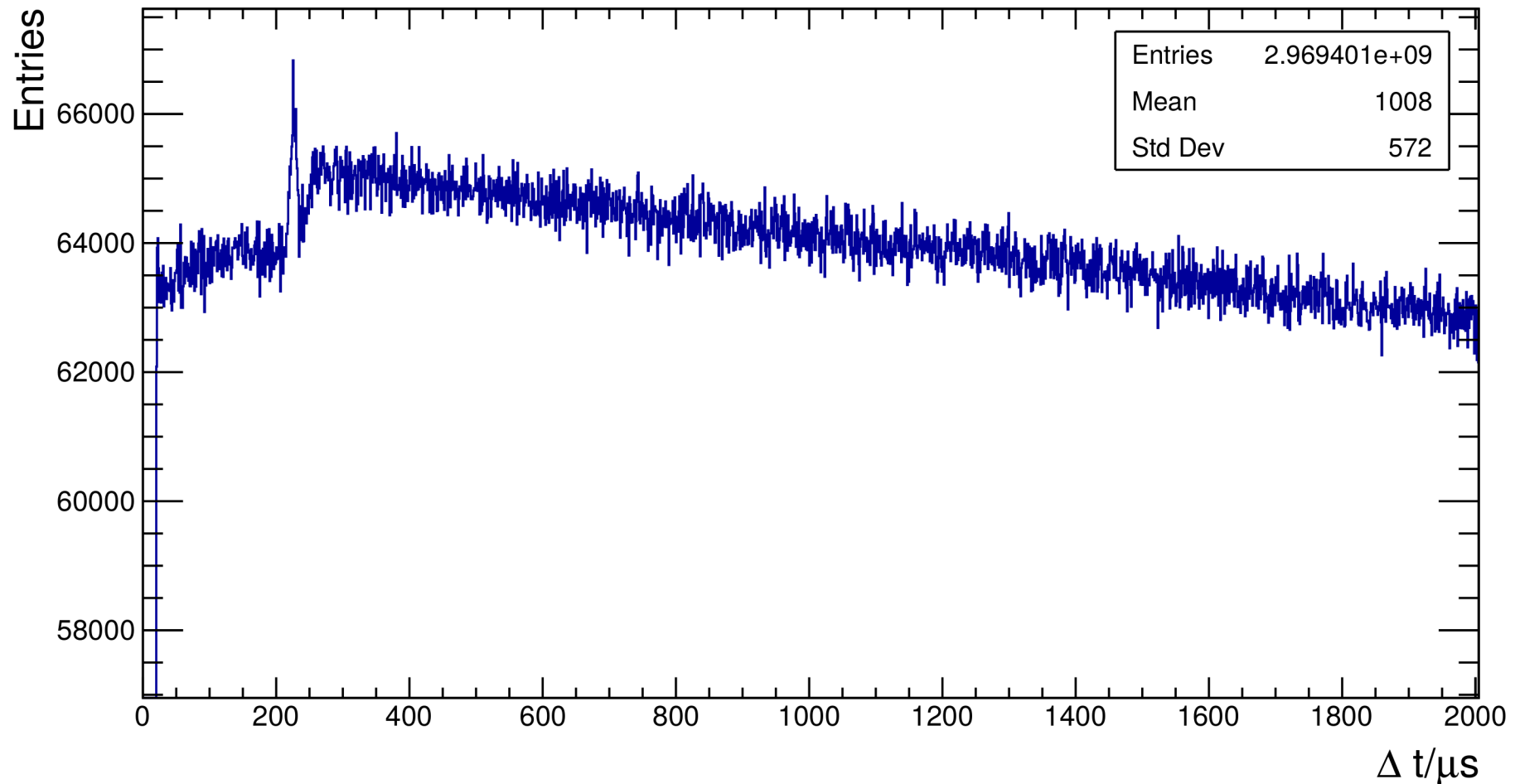
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Set-Up

- **Repeat same analysis as shown last meeting with data from June/July 2018**
 - **Are the peaks still there?**
 - **Did the number of affected stations change?**
 - **Is there a obvious reason for this visible in monitoring?**

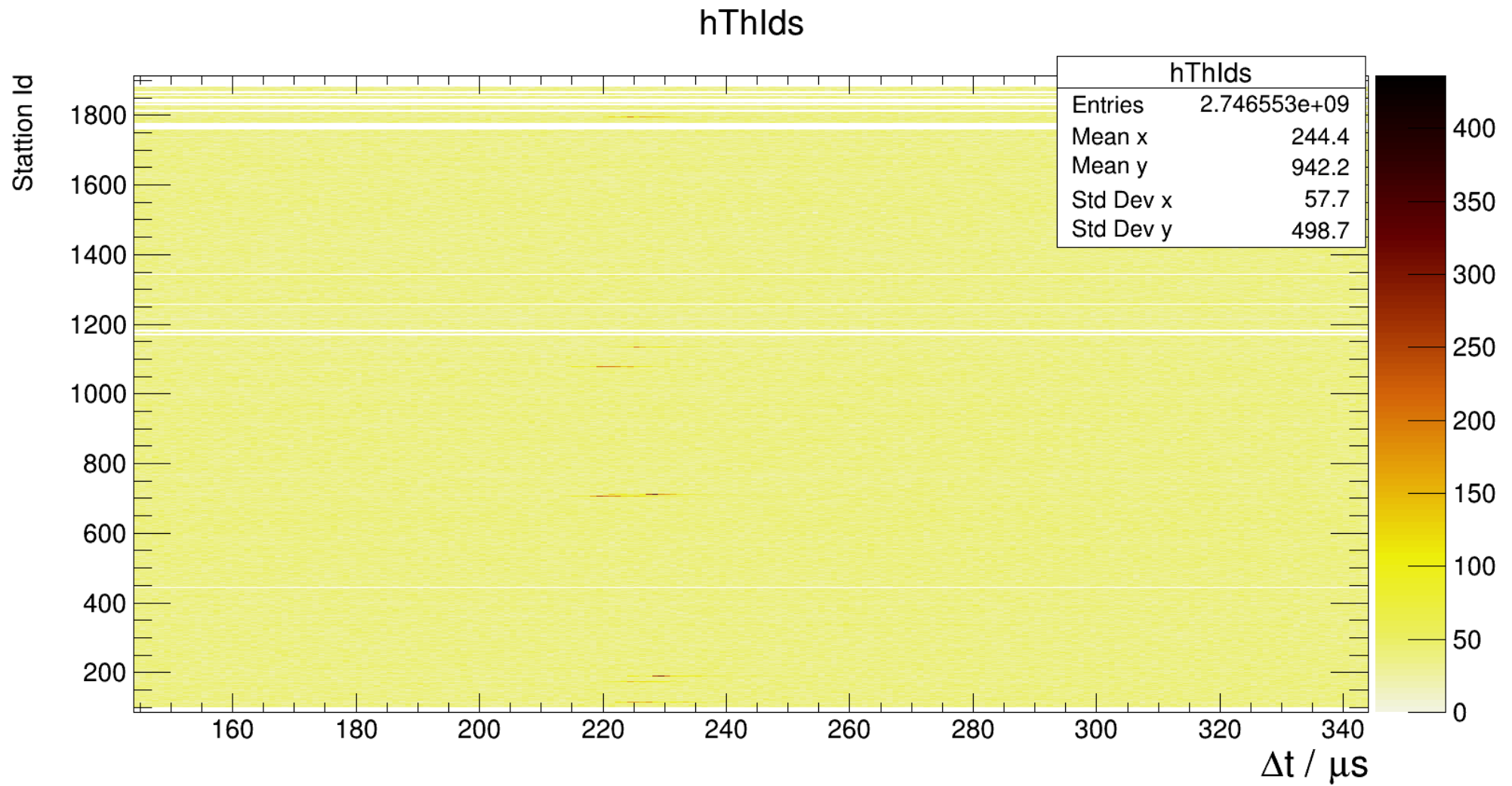
All Triggers

All triggers



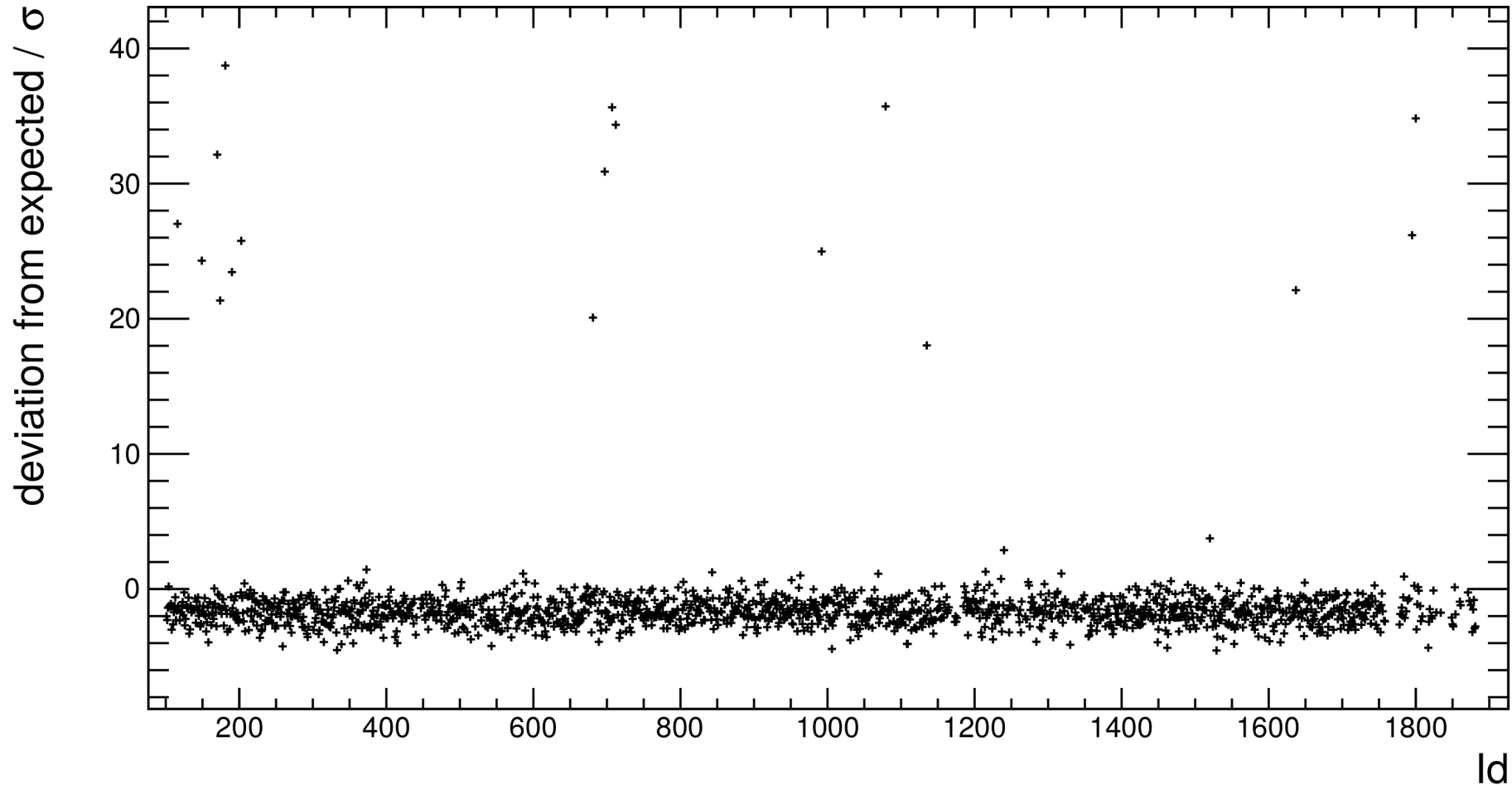
Dominated by Th-T2s

All Triggers



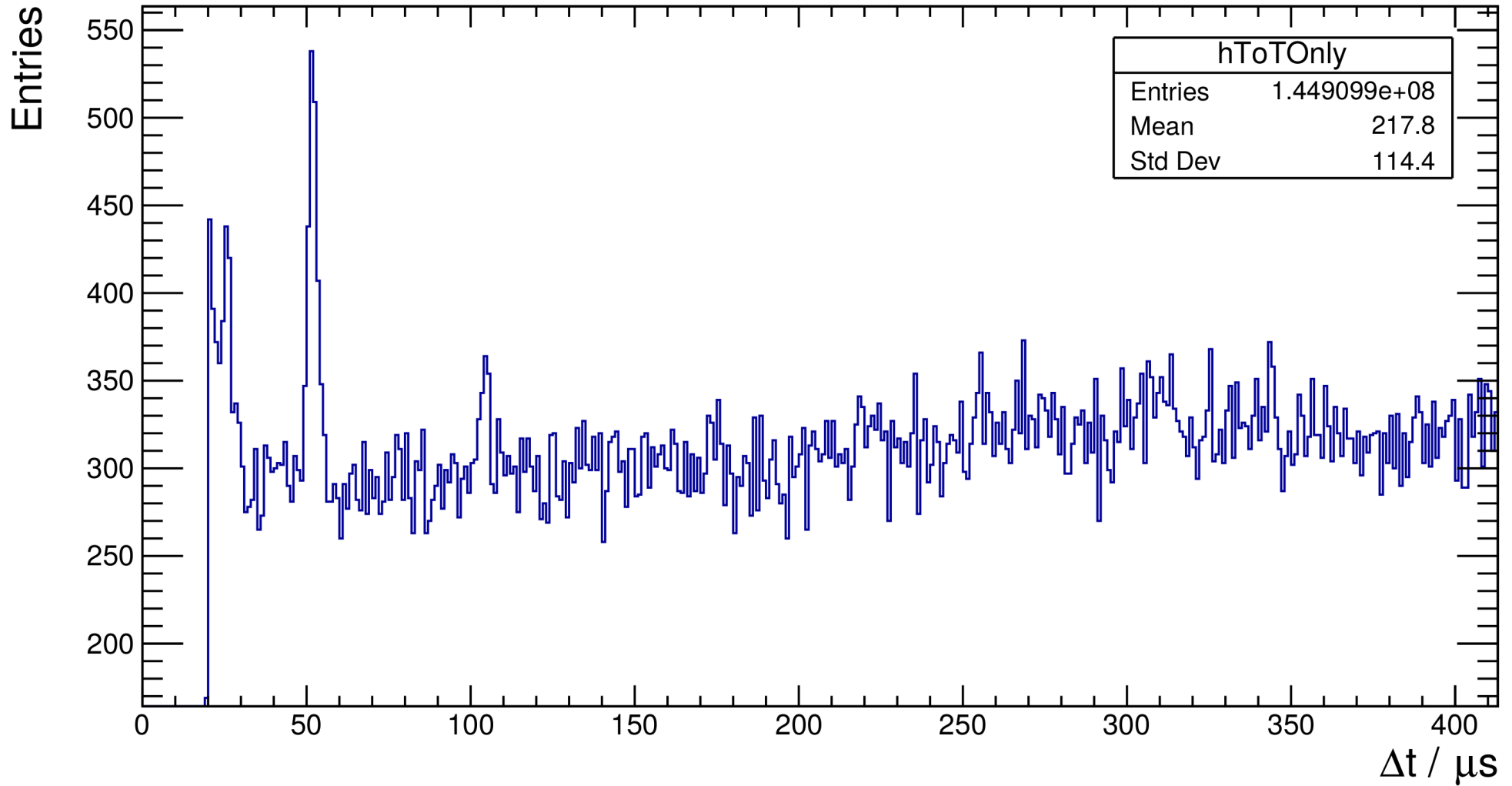
All Triggers

Threshold-T2s (200-235 μs)



ToT

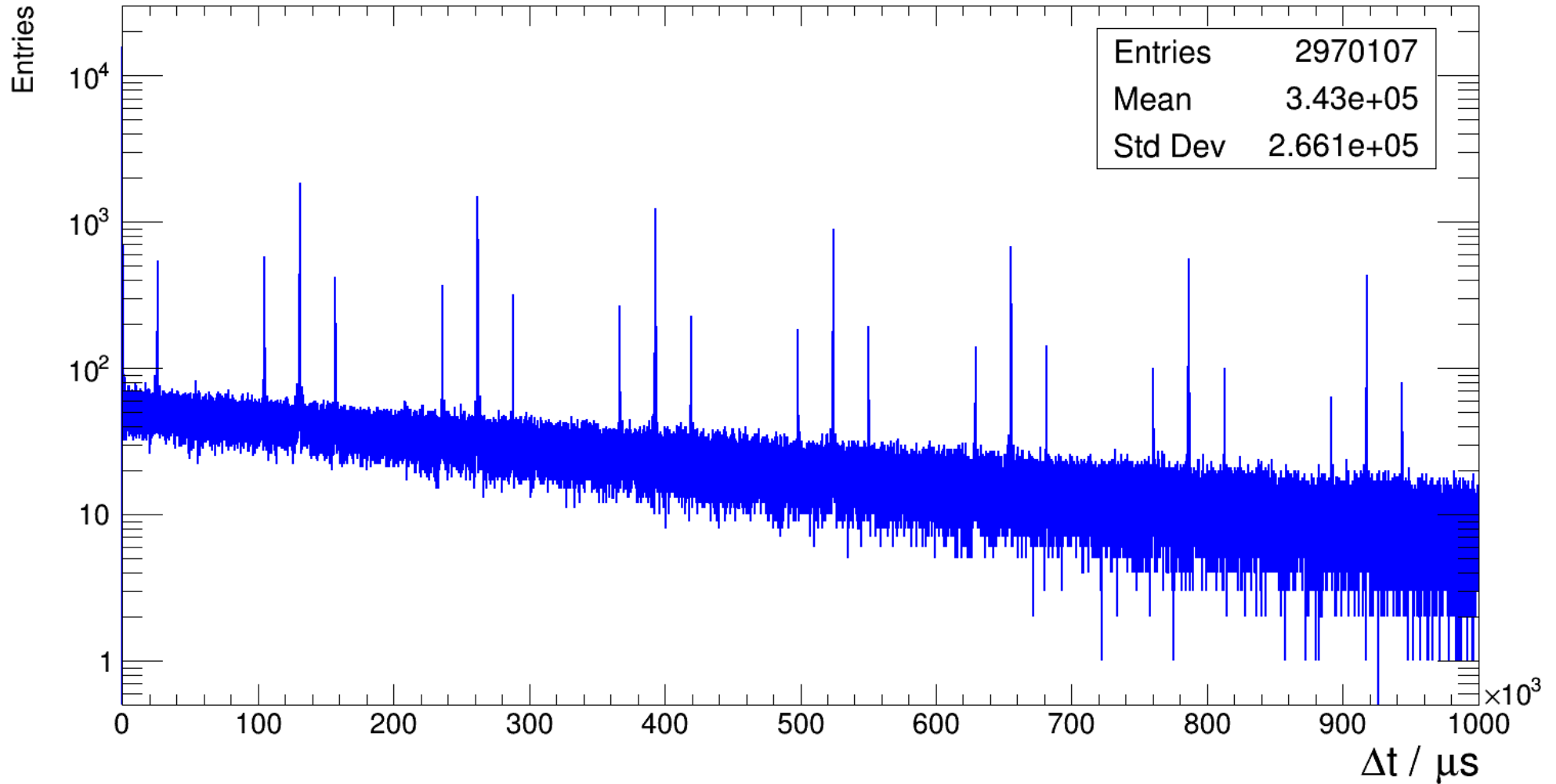
tot-only (05.07.2018)



Consider only ToTs

ToT

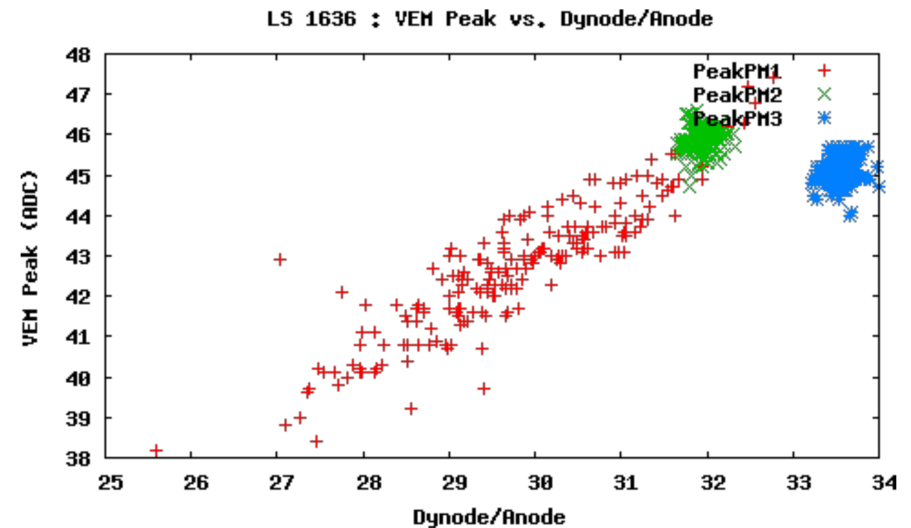
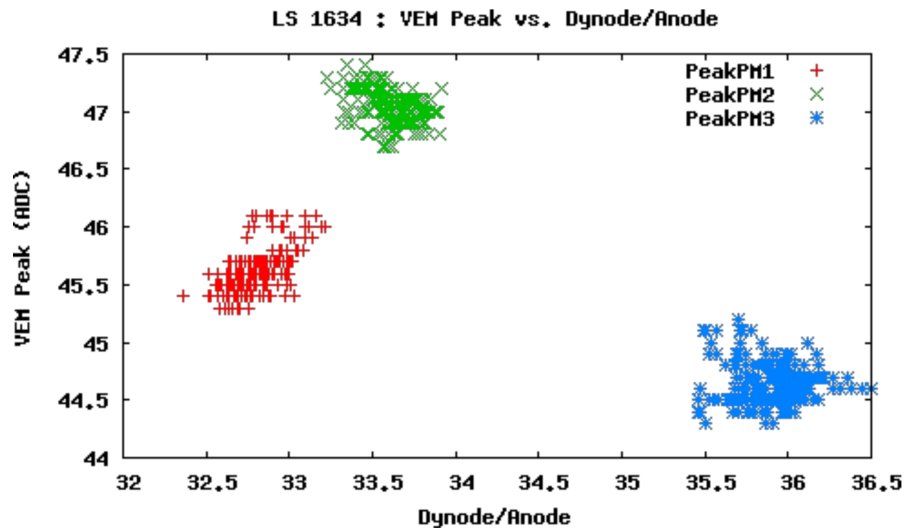
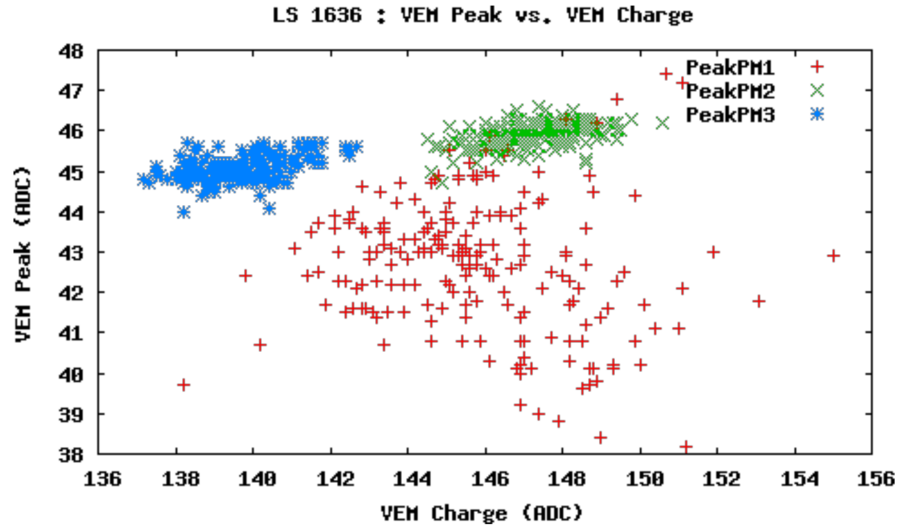
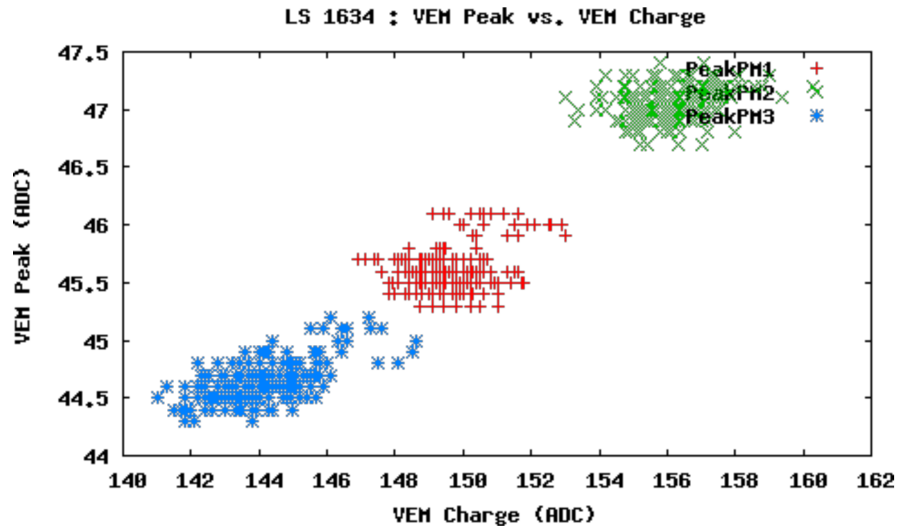
ToT - Id 1636 (June 2018)



Station 1636 – 10 - 30 June 2018

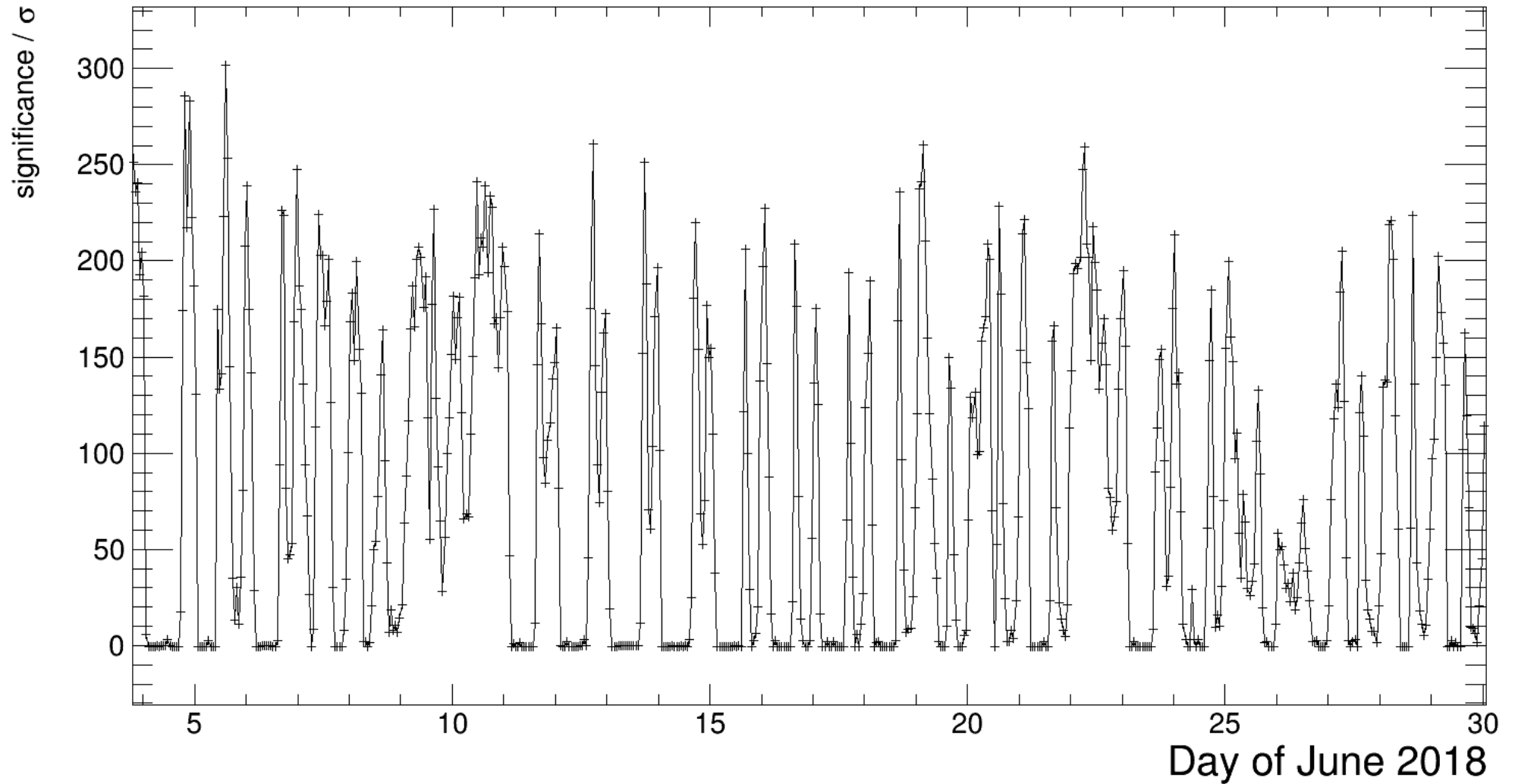
Station 1636 - Monitoring

Id 1634



Station 1636

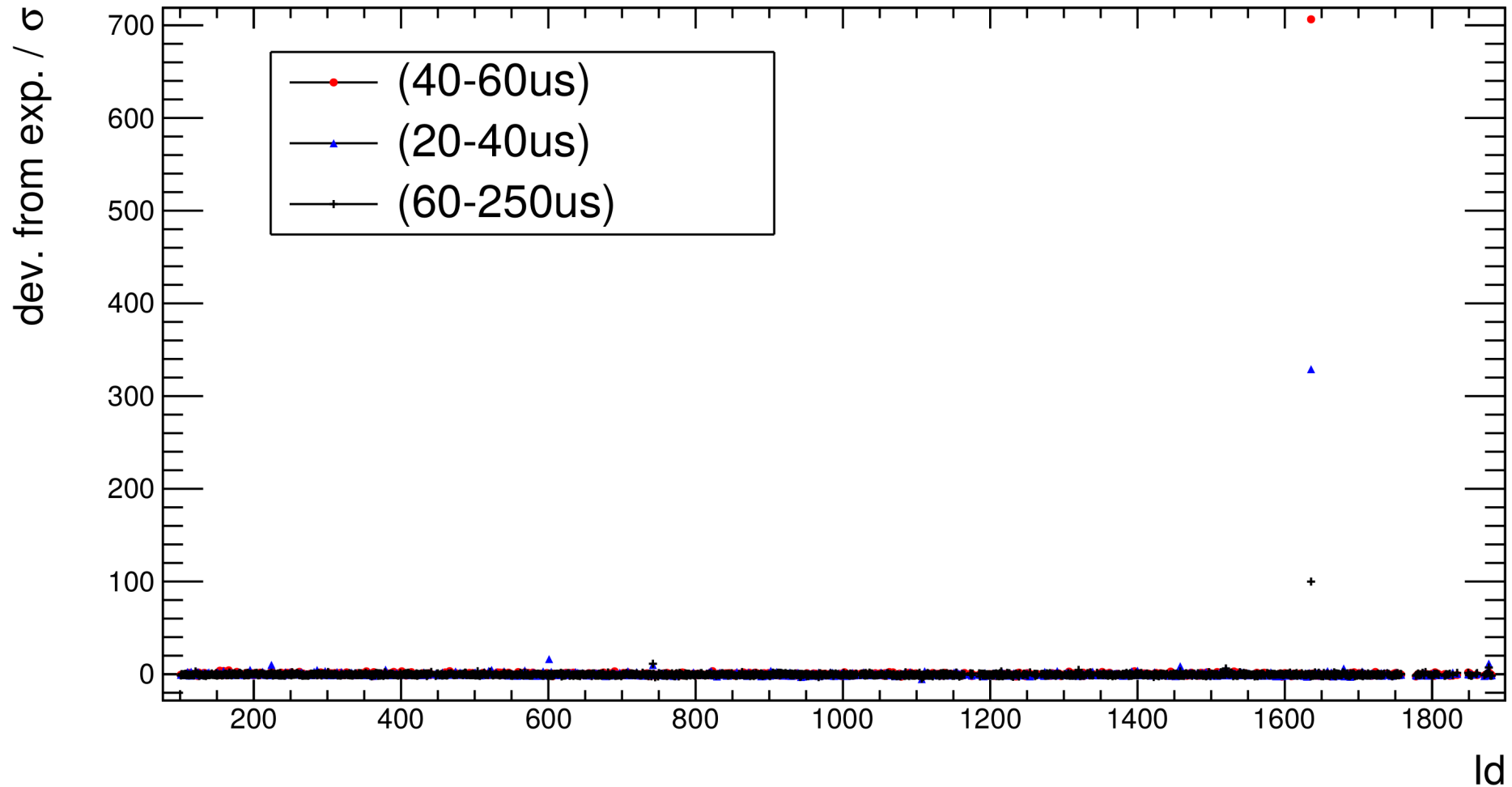
ToT-Peak2-1636 (40-60 μ s)



Time of Day dependence \rightarrow temperature?

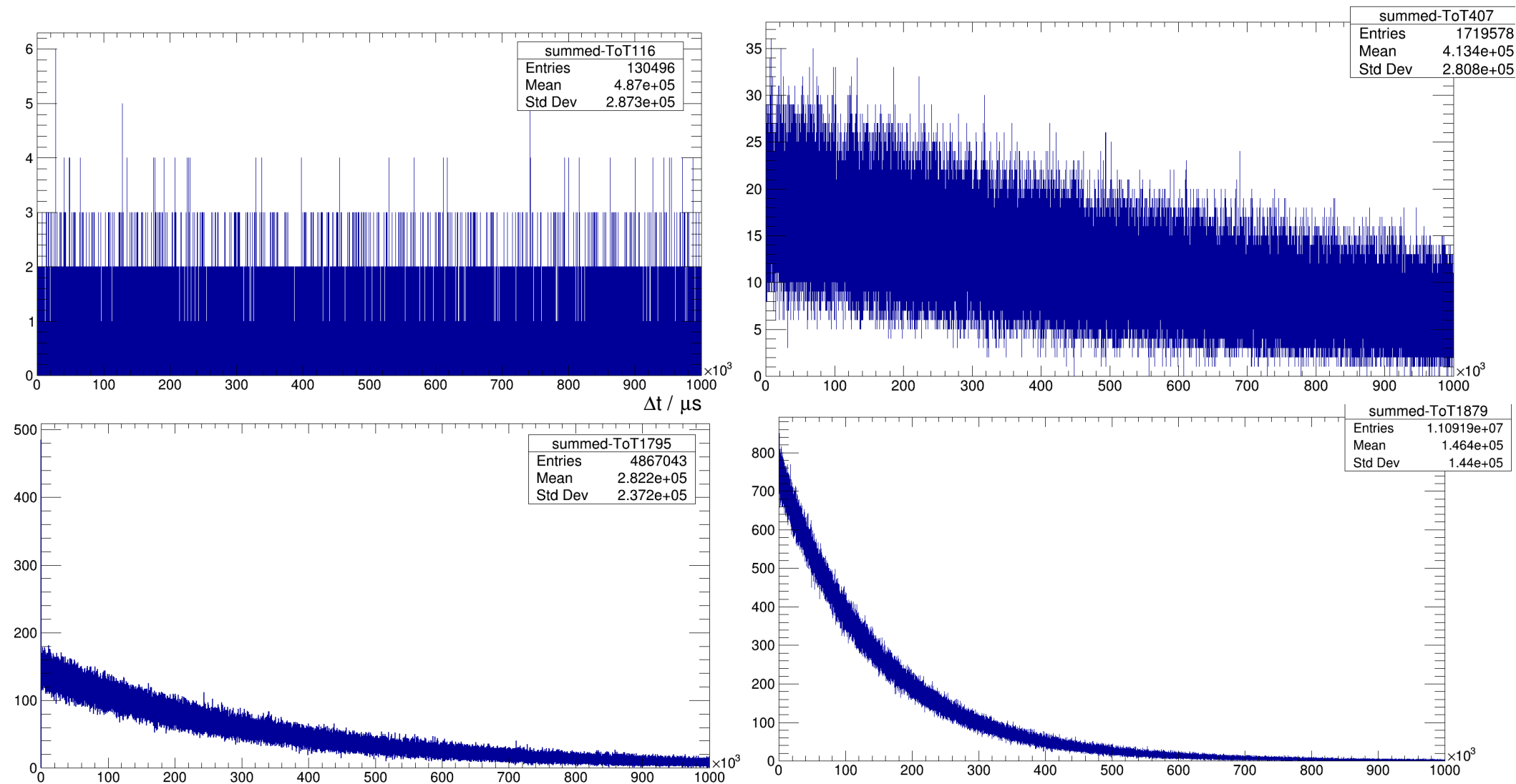
ToT

ToT-Peaks



10 June 2018: almost exclusively station 1636

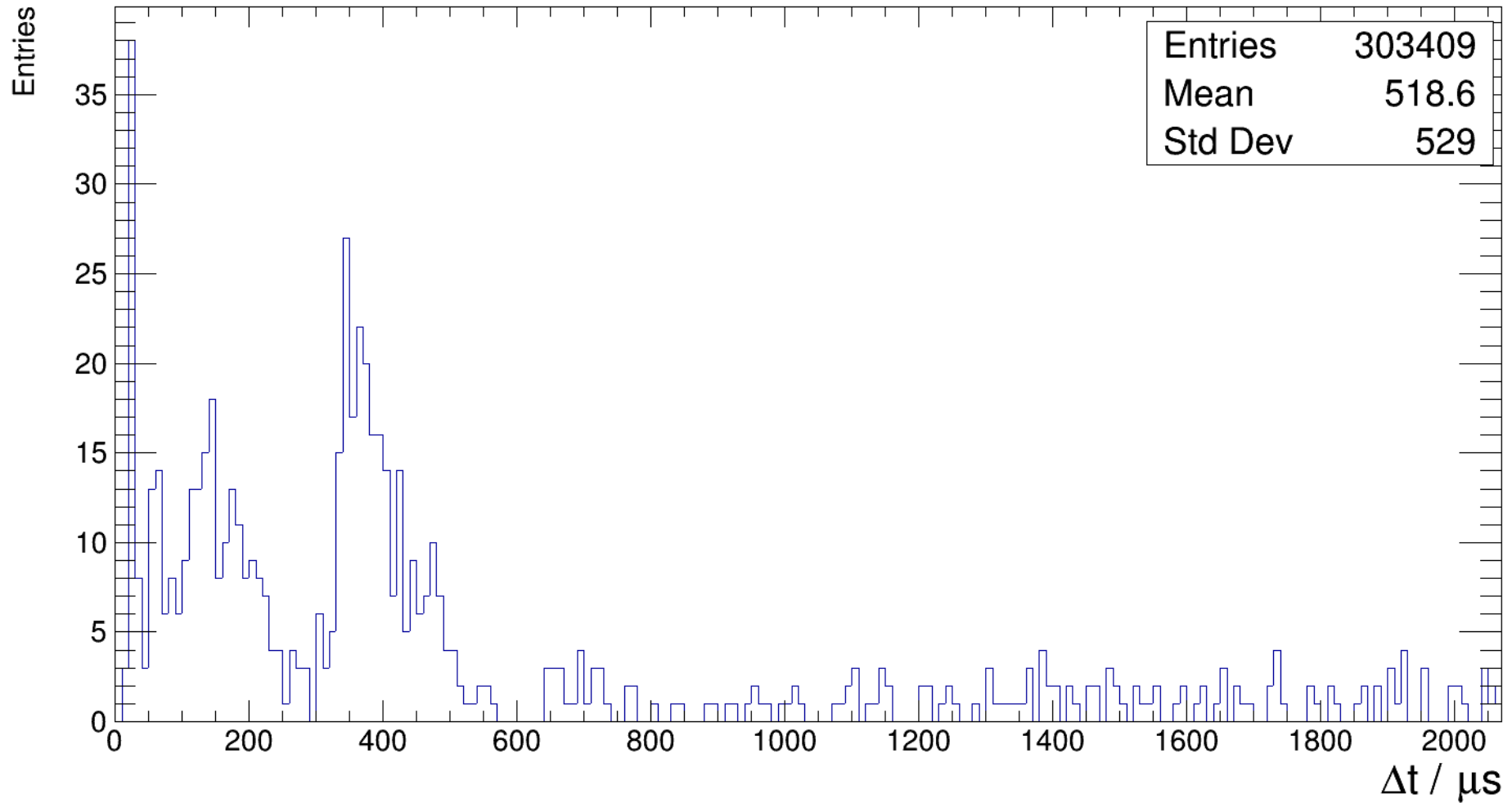
ToT-Rates



Huge variability

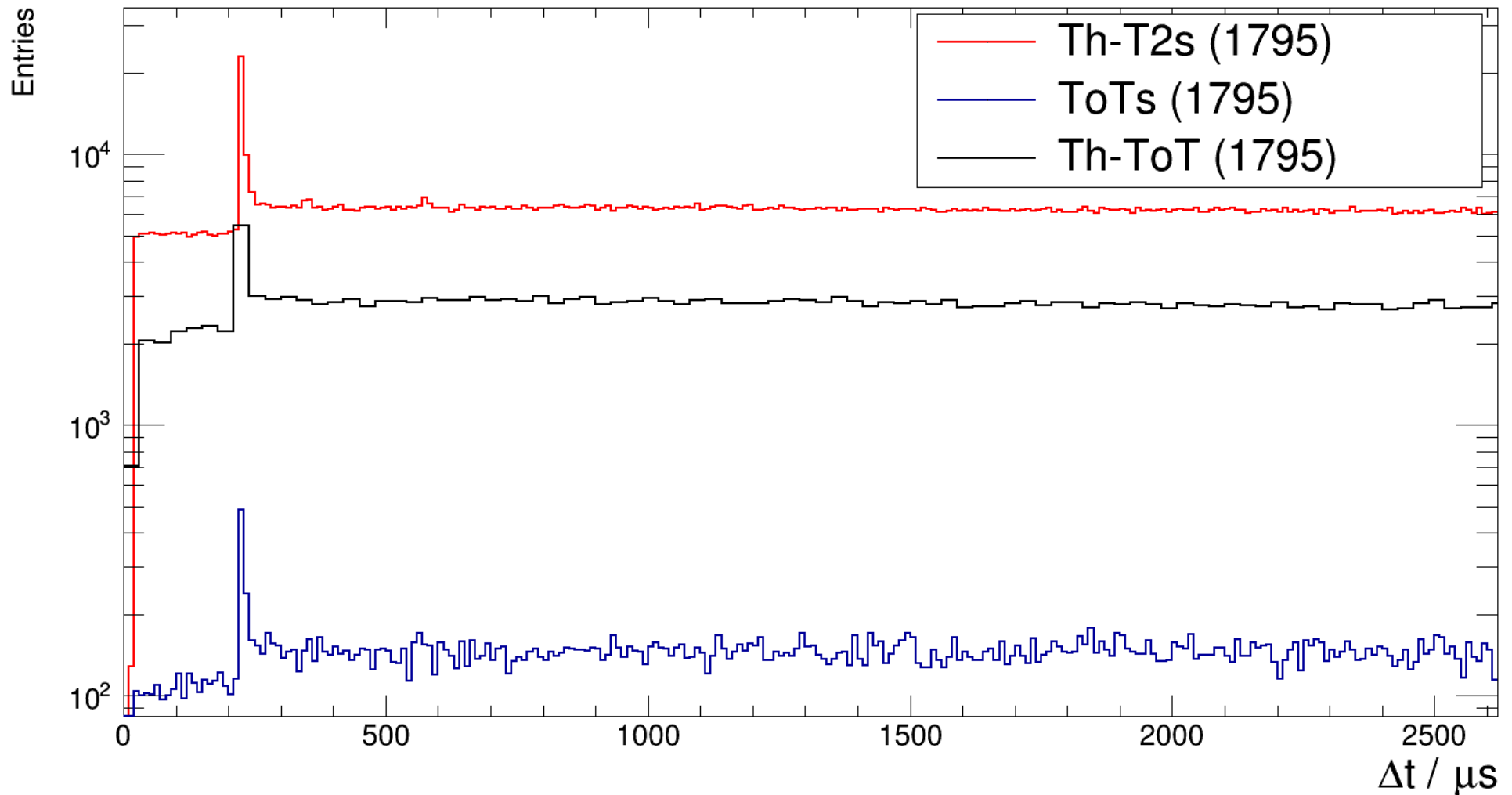
Station 1877

ToT (1877)



Not discovered before, needs more statistics

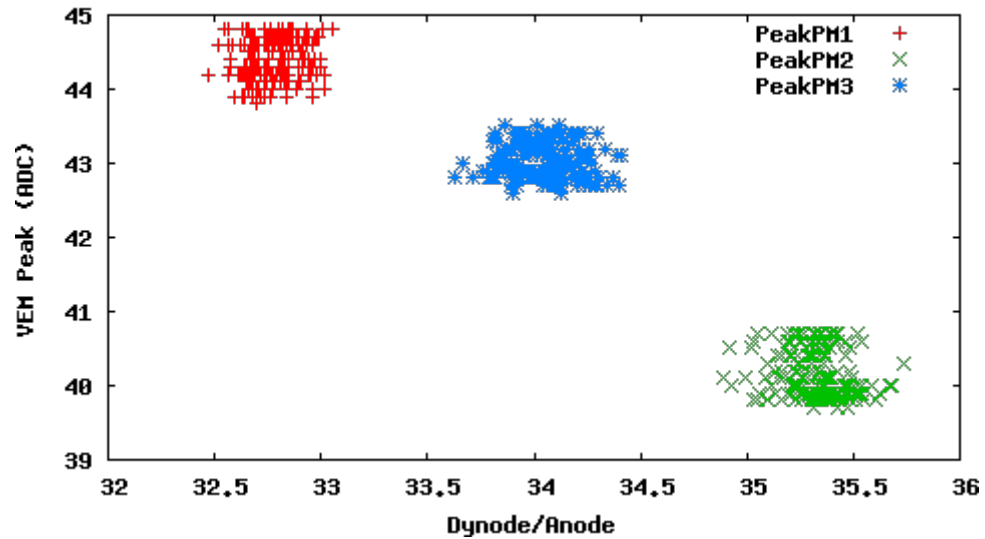
More statistics



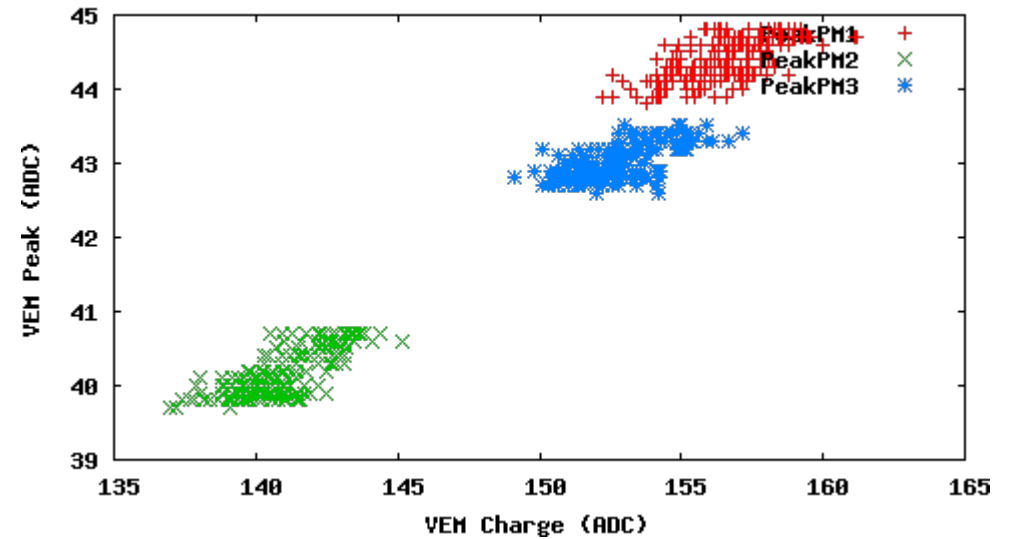
10 – 30 June 2018: Peaks from Th-T2s present for all trigger types (here Id 1795)

Station 1795

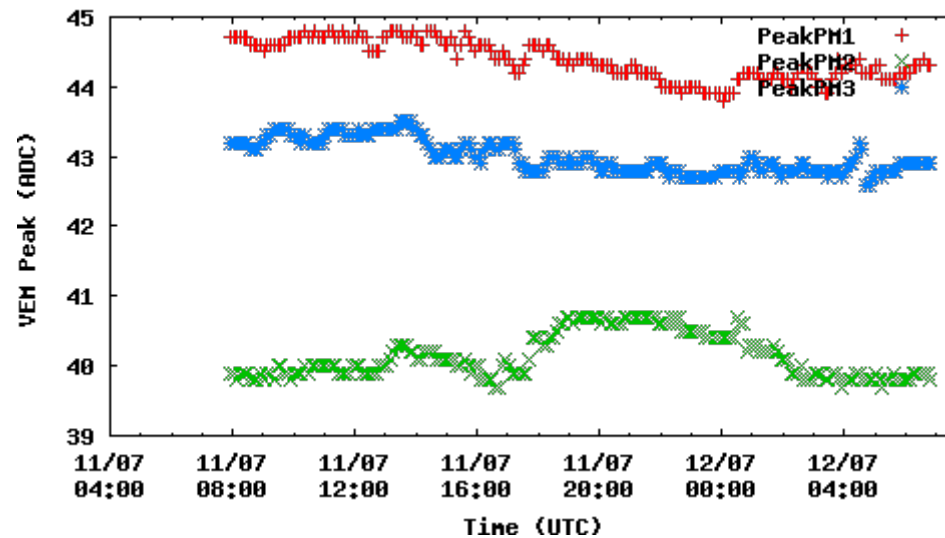
LS 1795 : VEM Peak vs. Dynode/Anode



LS 1795 : VEM Peak vs. VEM Charge



LS 1795 : VEM Peak



Conclusion

- **Peaks still present (July 2018)**
- **Stations with peaks in Th-T2s also have ones in ToTs**
- **No overlap of 'special' stations with Bad-PMTs from GAP-2018-29**

Station Ids – June 2018

Threshold-T2s

Id: 116 (yes)
Id: 149 (yes)
Id: 170 (no)
Id: 174 (yes)
Id: 181 (yes)
Id: 190 (yes)
Id: 203 (yes)
Id: 681 (no)
Id: 697 (yes)
Id: 707 (no)
Id: 712 (yes)
Id: 992 (yes)
Id: 1079 (no)
Id: 1135 (yes)
Id: 1637 (no)
Id: 1795 (no)
Id: 1800 (yes)

ToT Peak 1 (20-40 us)

Id: 224 (no)
Id: 379 (yes)
Id: 760 (no)
Id: 1636 (yes)

ToT (60-250 us)

Id: 742 (no)
Id: 760 (no)
Id: 1176 (yes)
Id: 1636 (yes)

ToT Peak 2 (40-60 us)

Id: 167 (no)
Id: 760 (no)
Id: 1636 (yes)