Event Trigger Panel
Introduction and Discussion

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Event Trigger IE Panel

ToF AMS Ionization Efficiency Calibration Panel for ET v1.0.5

Load ET Data
- Single file or folder

Outputs
- IE Average: 0.10 \pm 0.00
- RIE Average: 1.00 \pm 0.00

Individual Particle Time of Flight Traces

Final IE event count: 1400
% events in CER: 72.0
IE: 4.0
CER: 1.25 \pm 1.2
Flow (cm^3/s): 0.418

Graph Tweaks:
- Show PToF histogram
- Show error bars on Seg Avg
- Show only events in CER
- CER zoom
- CER autoscale

Examine event num:
- Forward: +
- Backlist: -

User Inputs
- Compound: NH4NO3
- Dm (nm): 480
- n/2 List: 30, 60, 15, 16, 17
- Anion MW: 62
- Cation MW: 18
- Density (g/cm^3): 1.72
-urga shape factor: 0.8

Step 2: Accept inputs, perform calculations

Histograms of IPP for CER

Frequency vs. Time of Flight

Average IE and RIE

Event number
Need more segments

- ADQ Firmware has an upper limit of 25 segments, and a maximum of 15 segments after trigger.

- m/z 30 does not return to baseline with only 15 segments after trigger (10 in this case)
Event Trigger with $\text{NH}_4\text{NO}_3$ - NO vaporizing slower than $\text{NO}_2$ with respect to $\text{NH}_4$ Ions in Ammonium Nitrate
Event Trigger with NH₄Cl - HCl & Cl vaporizing faster than NH₄ ions in Ammonium Chloride
Ions per particle as a function of pulser frequency

As pulser frequency increases more ions per particle are counted and the distributions become narrower.

For NH$_4$NO$_3$ calibrations, it is recommended to run event trigger at the fastest frequency possible.