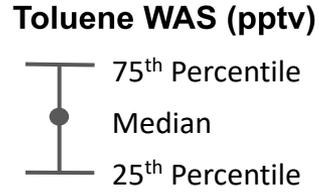
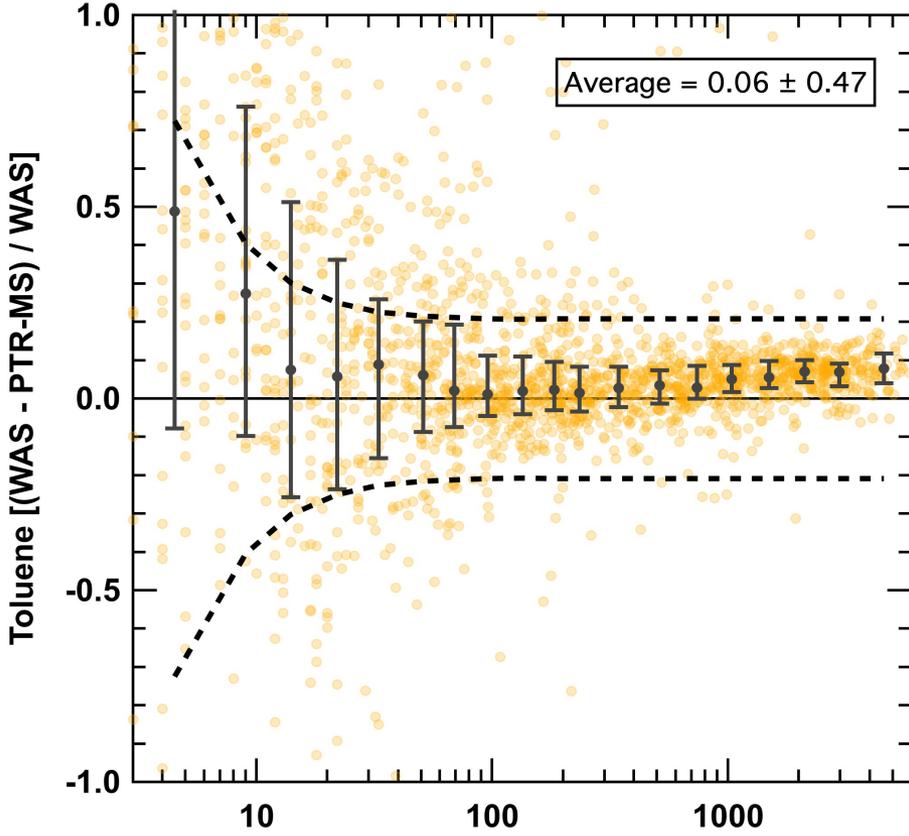
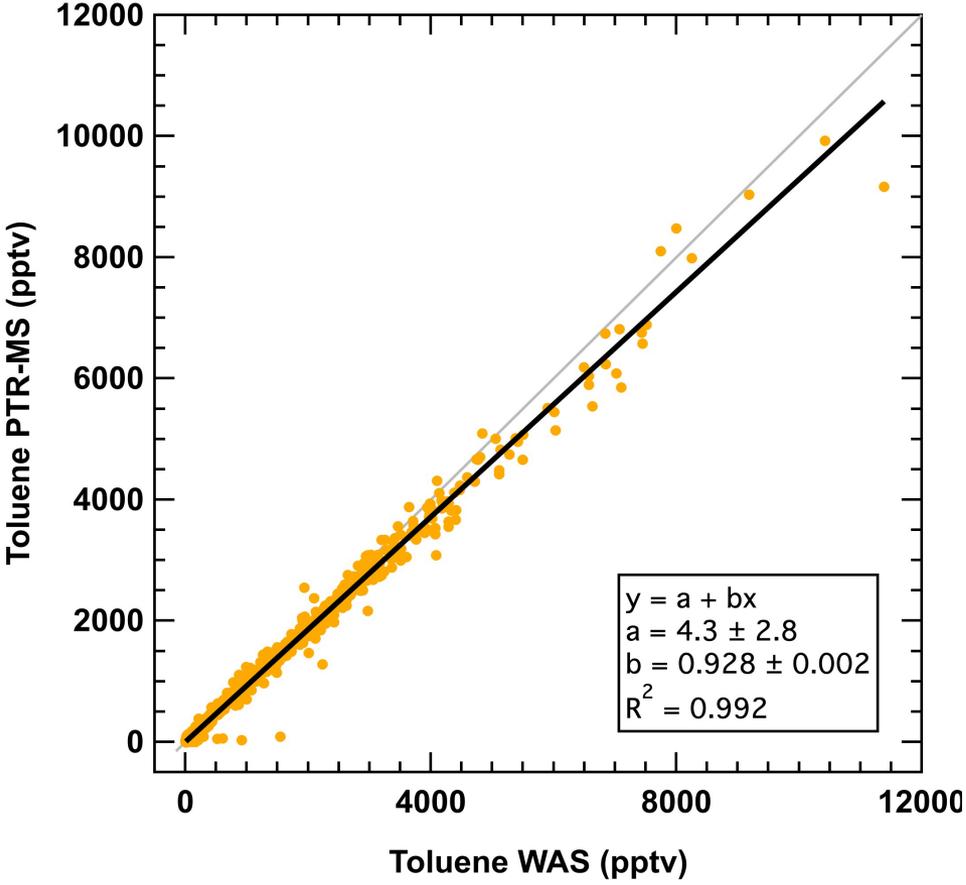


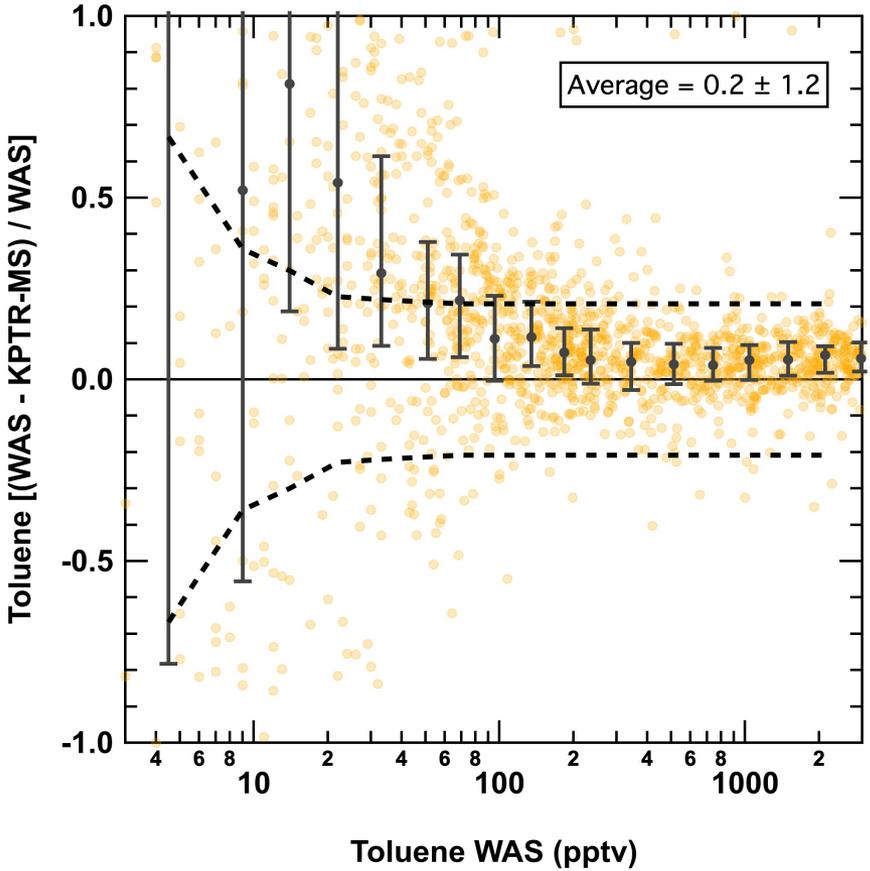
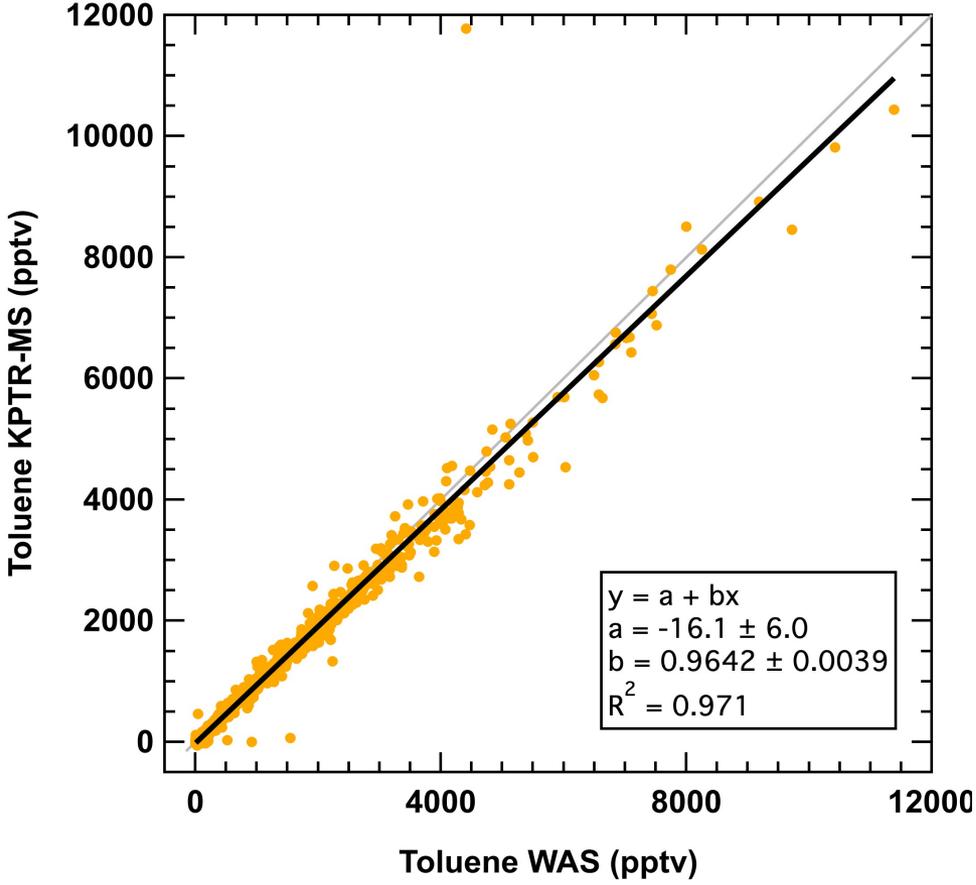
Toluene – U. of Oslo PTR-MS vs UCI WAS

Uncertainty envelopes based on WAS time base combined data uncertainty.



Toluene – NIER PTR-MS (KPTR-MS) vs UCI WAS

No May 2 KPTR-MS data. Uncertainty envelopes based on WAS time base combined data uncertainty.



Data:

- WAS Merge: korusaq-mrgWAS-dc8_merge_20160426_R6_thru20160618.ict (only data from flights 20160501-20160609 used in analysis – non-transit flights)

Correlation:

- Fit lines are derived from orthogonal distance regressions.
- R^2 values are calculated independently, not from orthogonal distance regression.

Uncertainty propagation (Uncertainty provided by PIs).

- U. of Oslo PTR-MS: 1s precision reported in data file, linearly propagated to WAS campaign median time interval ($\text{prec}/\sqrt{180}$). Combined in quadrature sum with 20% accuracy.
- KPTR-MS: 20% accuracy, no precision reported.
- WAS uncertainty: \pm (3% or 3 pptv + 5%), precision and accuracy combined using quadrature sum.

Difference dependence on Toluene value:

- Relative Difference calculated by $[\text{WAS} - \text{PTR-MS}] / \text{WAS}$.
- Median, 25th, and 75th percentiles based on 100 data point bins after data is sorted by WAS values.
- Uncertainty envelopes based on WAS uncertainty.