Caltech CIMS Instrument

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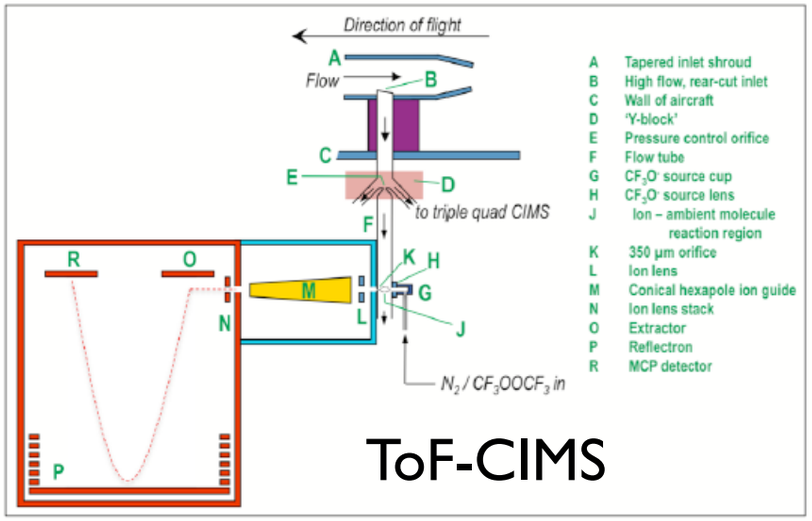
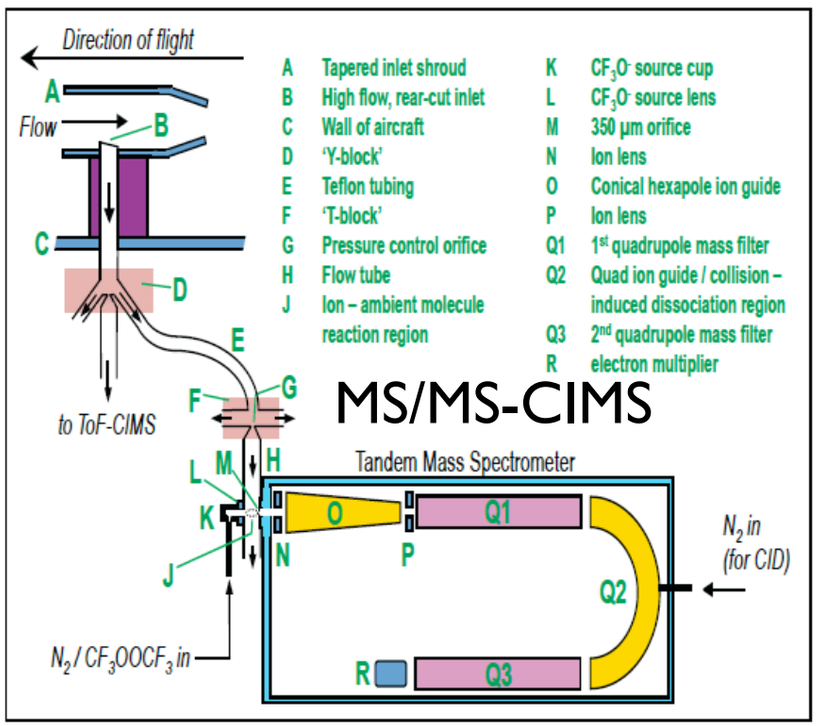


ToF-CIMS



MS/MS-CIMS

Table 3. Proposed Caltech CIMS measurements for KORUS-AQ. Precision and accuracy numbers are estimated for typical conditions expected during the campaigns.

Molecule	Payload priority	Precision (pptv)	Accuracy	Data rate	Field Data	Ref
H_2O_2	2	20	30%	1 Hz	×	1,2
CH_3OOH (MHP)	2	50	40%*	1 s every 10 s		3,4
HNO_3	2	15	30%	1 Hz	×	5
HCN	2	20	30%	1 Hz	×	6
HO_2NO_2 (PNA)	2	25	30%	1 Hz	×	7
SO_2	2	100	40%	1 Hz	×	8
Formic Acid	3	80	40%	1 Hz		9
Acetic Acid	3	80	40%	1 Hz		9
Propanoic Acid	3	50	30%	1 Hz		10
$CH_3C(O)OOH$ (PAA)	3	20	30%	1 Hz	×	
Glycolaldehyde	-	40	50%	1 Hz		11
Hydroxyacetone	-	40	50%	1 Hz	x	
Isoprene hydroxy-nitrates	2 ($RONO_2$)	10	40%	1 Hz	x	12,13
Isoprene dihydroxy-epoxides	-	40	60%	1 s every 10 s		14
Isoprene hydroxy-peroxides	2 (ROOH)	40	40%	1 s every 10 s		14
Propanone nitrate	2 ($RONO_2$)	40	40%	1 Hz	x	13
Hydroperoxy aldehydes (HPALD)	-	40	40%	1 Hz	x	12,15, 16
Hydroxynitrates	2 (RONO2)	10	30%	1 Hz	x	17

*at [H_2O] < 250 ppmv and increases with [H_2O]. **1.** [*Crounse et al.*, 2006]; **2.** [*Mao et al.*, 2010]; **3.** [*Avery et al.*, 2010]; **4.** [*St. Clair et al.*, 2010]; **5.** [*McNaughton et al.*, 2009]; **6.** [*Crounse et al.*, 2009]; **7.** [*Spencer et al.*, 2009]; **8.** [*Carn et al.*, 2011]; **9.** [*Paulot et al.*, 2009a]; **10.** [*Yokelson et al.*, 2009]; **11.** [*St. Clair*, 2014]; **12.** [*Beaver et al.*, 2012]; **13.** [*Paulot et al.*, 2009a]; **14.** [*Paulot et al.*, 2009b]; **15.** [*Peeters et al.*, 2009]; **16.** [*Crounse et al.*, 2011]; **17.** [*Teng et al.*, 2015].