



Supplement of

Measurements of hydroperoxy radicals (HO_2) at atmospheric concentrations using bromide chemical ionisation mass spectrometry

Sascha R. Albrecht et al.

Correspondence to: Sascha R. Albrecht (s.albrecht@fz-juelich.de)

The copyright of individual parts of the supplement might differ from the CC BY 4.0 License.

Supplementary Information 1 Experimental parameters

day	H ₂ O	O ₃	VOC	VOC conc.	NO	NO ₂	CO
29 May	1.8 %	140 ppbv	cis-IEPOX	3.2 ppbv	0.06 ppbv	1.2 ppbv	0.03 ppmv
31 May	1.6 %	50 ppbv	isoprene	5 ppbv	3.0 ppbv	3.2 ppbv	0.05 ppmv
01 June	1.6 %	140 ppbv	trans-IEPOX	1.7 ppbv	0.05 ppbv	1.0 ppbv	0.03 ppmv
02 June	1.7 %	30 ppbv	cis-IEPOX	4.3 ppbv	3.0 ppbv	1.8 ppbv	0.06 ppmv
14 June	1.8 %	170 ppbv	1,2-ISOPROOH	2.4 ppbv	0.06 ppbv	1.3 ppbv	0.02 ppmv
15 June	2.1 %	190 ppbv	1,2-ISOPROOH	0.7 ppbv	0.04 ppbv	1.0 ppbv	0.03 ppmv
19 June	1.9 %	70 ppbv	none		0.14 ppbv	2.1 ppbv	0.9 ppmv
20 June	1.9 %	160 ppbv	1,2-ISOPROOH	1.9 ppbv	0.04 ppbv	1.2 ppbv	0.04 ppmv
21 June	0.03 %	170 ppbv	1,2-ISOPROOH, 4,3-ISOPROOH	6.5 ppbv 1 ppbv	0.01 ppbv	0.4 ppbv	0.15 ppmv
22 June	2.0 %	170 ppbv	4,3-ISOPROOH	9 ppbv	0.04 ppbv	1.0 ppbv	0.1 ppmv
24 June	1.4 %	160 ppbv	none		0.06 ppbv	0.8 ppbv	3.0 ppmv
26 June	1.6 %	170 ppbv	none		0.05 ppbv	0.9 ppbv	0.02 ppmv

Table S1. The maximum concentration of reactants present in the reaction chamber during the experiments used for the correlation plots show in the publication. The VOC concentrations for ISOPROOH and IEPOX are preliminary data and are having an higher uncertainty.

Supplementary Information 2 IEPOX interference

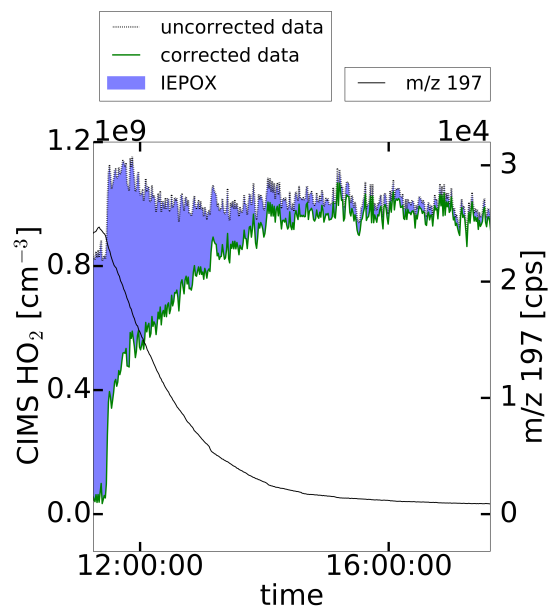


Figure S1. The HO₂ concentrations measured by the CIMS on 29 May, the blue shaded area indicates the correction for the IEPOX interference (see text for details). On the right axis the signal for mass 197 is shown, where IEPOX appears as cluster with bromide in the mass spectrum.

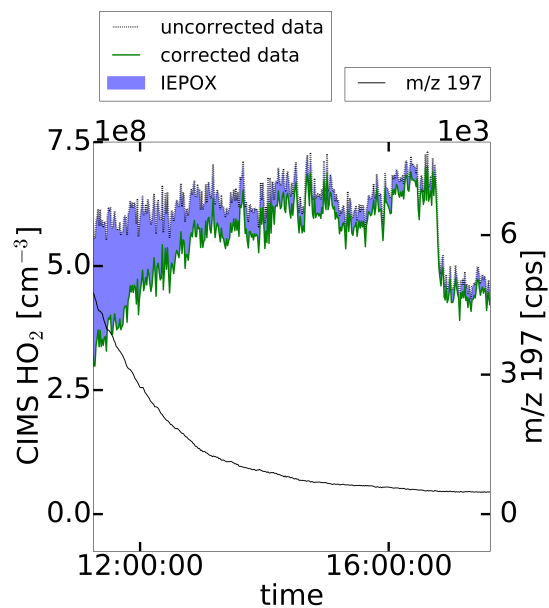


Figure S2. The HO₂ concentrations measured by the CIMS on 01 June, the blue shaded area indicates the correction for the IEPOX interference (see text for details). On the right axis the signal for mass 197 is shown, where IEPOX appears as cluster with bromide in the mass spectrum.

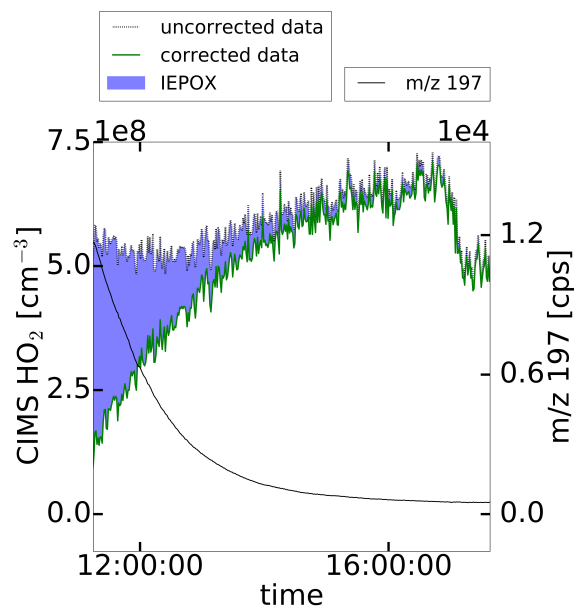


Figure S3. The HO₂ concentrations measured by the CIMS on 02 June, the blue shaded area indicates the correction for the IEPOX interference (see text for details). On the right axis the signal for mass 197 is shown, where IEPOX appears as cluster with bromide in the mass spectrum.

Supplementary Information 3 Ozone experiment

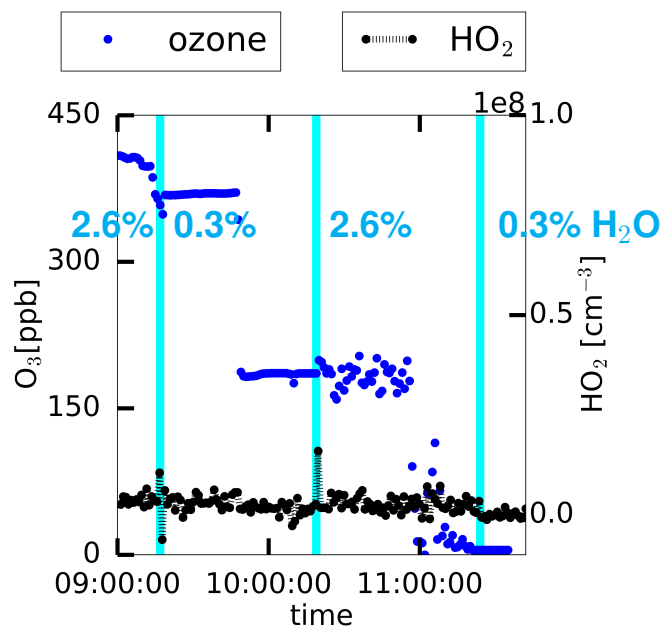


Figure S4. The plot shows the ozone concentration (left axis) applied to the inlet as blue dots and the normalized HO₂ signal (right axis) as black dots connected by a dashed line. The cyan lines indicate a change in the water mixing ratio applied. The water mixing ratio has been changed from 2.6% to 0.3% to 2.6% to 0.3%.

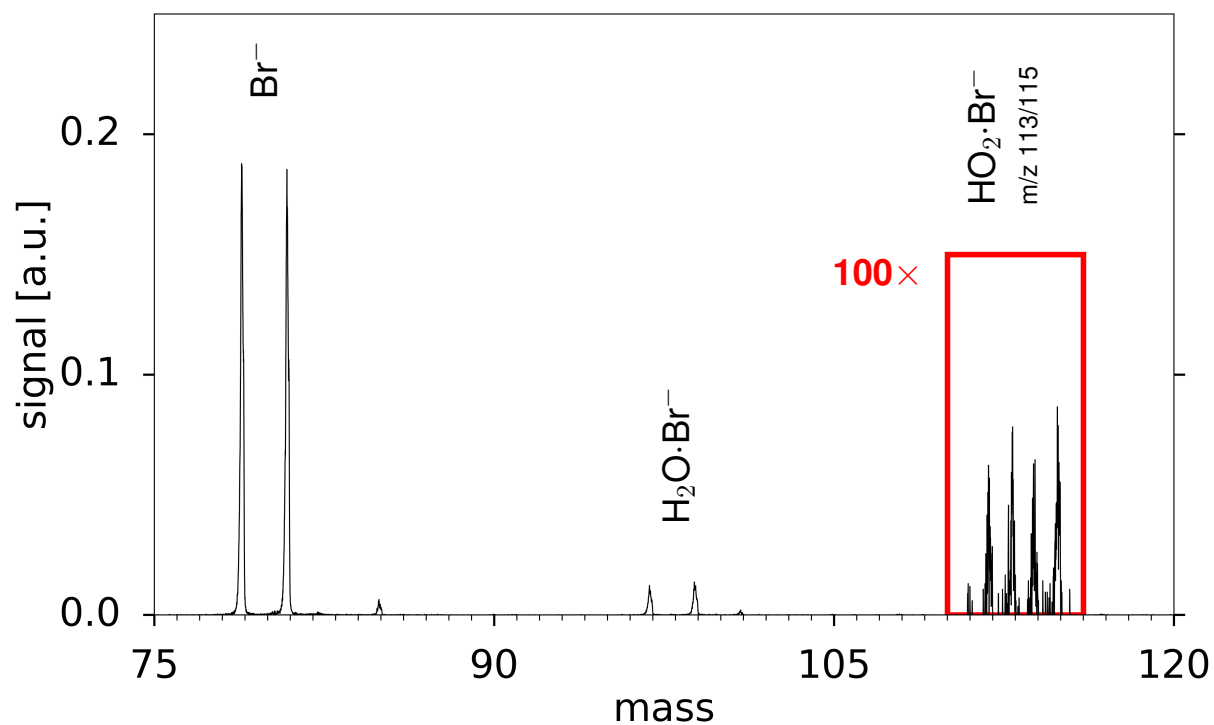


Figure S5. A mass spectrum showing a HO_2 measurement of 21 June, the intensity of masses shown in the red box is multiplied by a factor of 100.