



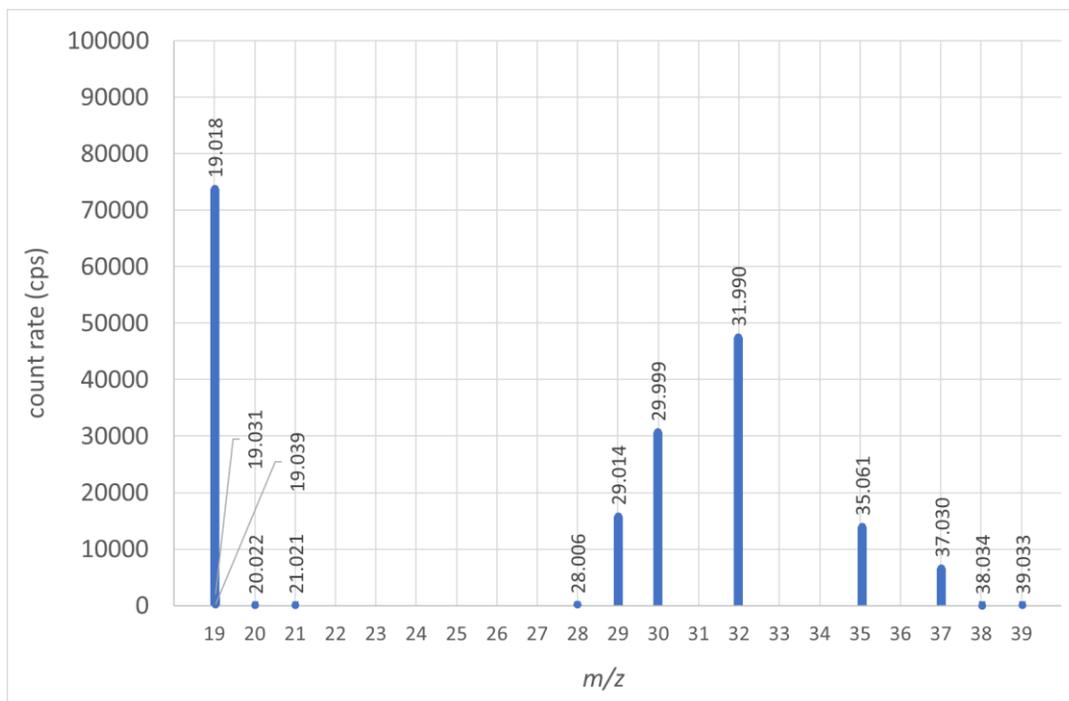
*Supplement of*

## **On the development of a new prototype PTR-ToF-MS instrument and its application to the detection of atmospheric amines**

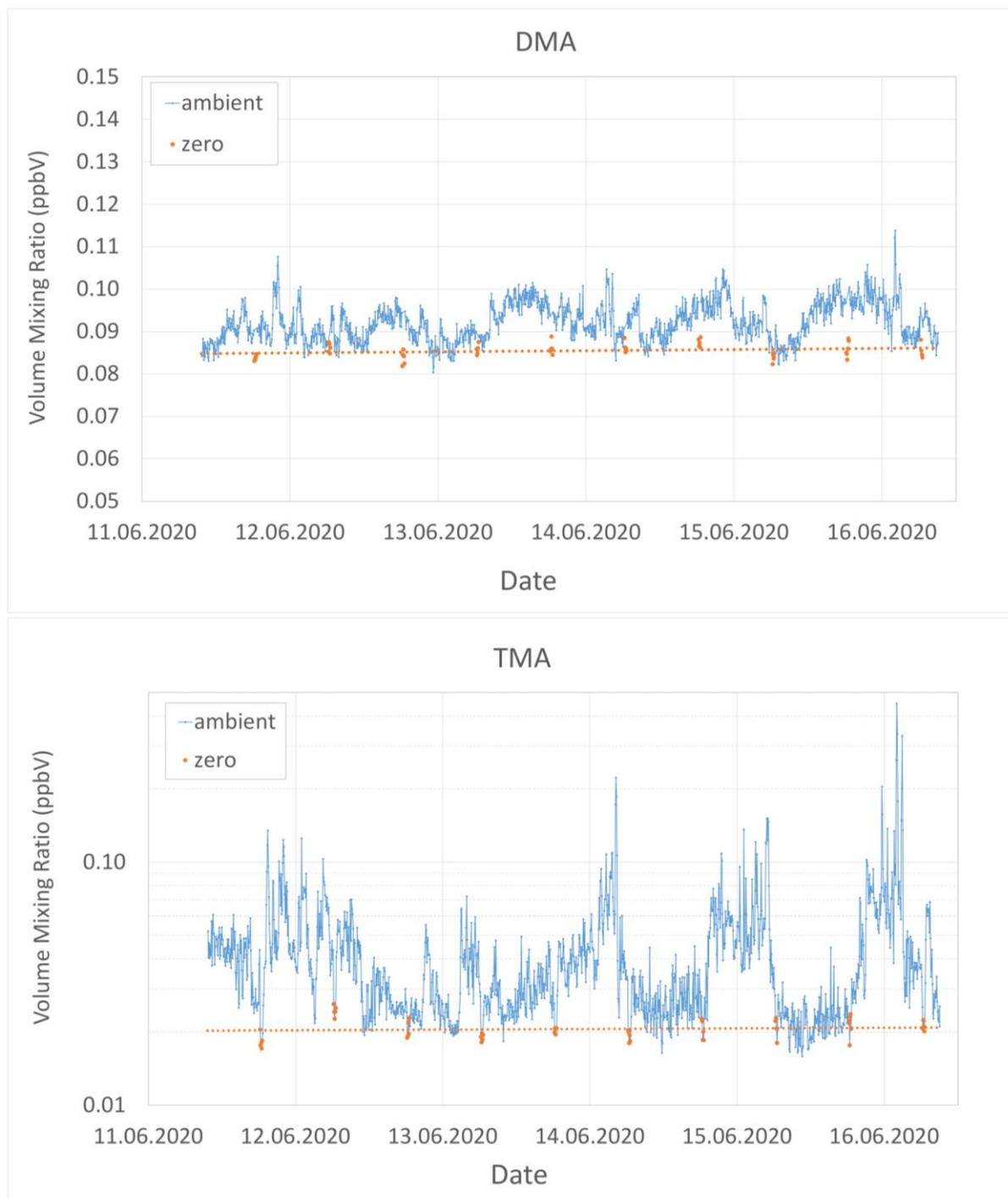
**Alexander Håland et al.**

*Correspondence to:* Armin Wisthaler ([armin.wisthaler@kjemi.uio.no](mailto:armin.wisthaler@kjemi.uio.no))

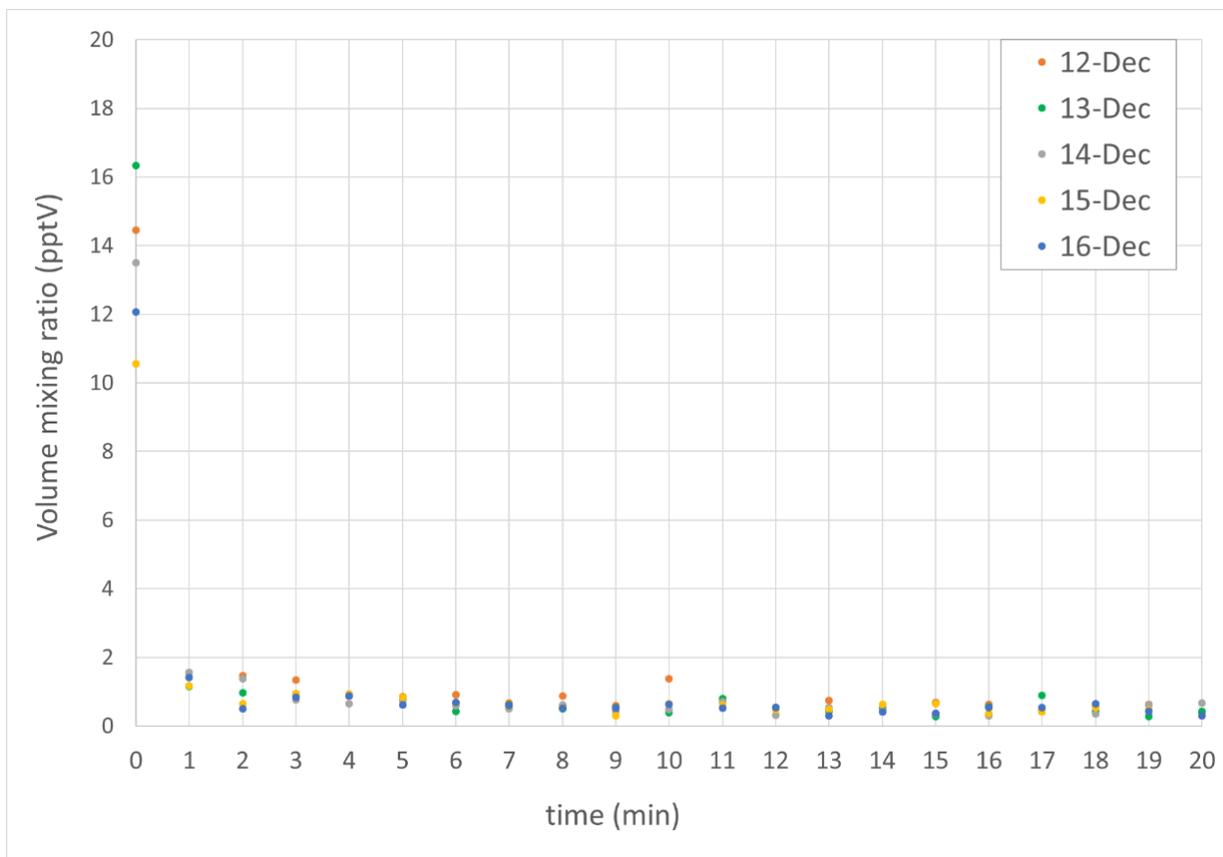
The copyright of individual parts of the supplement might differ from the article licence.



**Figure S1.** Mass spectrum showing the main  $m/z$  signals when the HCGD ion source was operated in the  $\text{NH}_4^+$  mode. The saturated  $\text{NH}_4^+$  signal at  $m/z$  18.039 is not shown, the  $^{15}\text{NH}_4^+$  isotope (0.37%) signal at  $m/z$  19.031 was used for reagent ion quantification. The other signals were assigned as follows:  $m/z$  19.039:  $\text{NDH}_3^+$ ;  $m/z$  19.018, 20.022, 21.021:  $\text{H}_3\text{O}^+$  (with isotopes);  $m/z$  28.006:  $\text{N}_2^+$ ,  $m/z$  29.014:  $\text{N}_2\text{H}^+$ ,  $m/z$  29.999:  $\text{NO}^+$ ,  $m/z$  31.990:  $\text{O}_2^+$ ;  $m/z$  35.061:  $\text{NH}_4^+(\text{NH}_3)$ ;  $m/z$  37.030, 38.034, 39.033:  $\text{H}_3\text{O}^+(\text{H}_2\text{O})$  (with isotopes).



**Figure S2.** Time evolution of the DMA (upper panel) and the TMA (lower panel) signals (5-min averages, converted to ppbV) as recorded during the measurements at Sande. The instrumental background (red dots) was measured every 12 hours for 25 minutes by overflowing the instrument subsampling flow with ambient air that had passed through a heated (350 °C) Pt/Pd catalyst.



**Figure S3.** Time evolution of the background signal (1-min averages, converted to pptV) of AMP as measured during five consecutive days. The instrumental background was measured once a day for 20 minutes by overflowing the instrument subsampling flow with ambient air that had passed through a heated (350 °C) Pt/Pd catalyst. The data from the first five minutes of zeroing were discarded because of signal tailing.