

***Interactive comment on* “Technical Note:  
Determination of formaldehyde mixing ratios in  
polluted air with PTR-MS: laboratory experiments  
and field measurements” by S. Inomata et al.**

**S. Inomata et al.**

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We thank valuable comments and suggestions from the anonymous referees. Up to now, we have received comments from two referees. Both the referees #1 and #2 commented that the intercomparison measurements for HCHO by the MAX-DOAS can not be used to validate the PTR-MS measurements because the MAX-DOAS measurements have large uncertainties, and air masses measured with two techniques are different. We would like to respond to this comment.

We agree with their comments. We made the comparison of these two measurements to check the "consistency" of the correction scheme for PTR-MS data rather than to validate PTR-MS data. First, we found a positive relationship between the two data

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sets from PTR-MS and MAX-DOAS, although the mixing ratios of HCHO varied largely from 0 to ~6 ppbv. We believe that it is a meaningful result indicating the "consistency". The data in the uncorrected PTR-MS versus MAX-DOAS scatterplots (Fig. 6a) was not distributed around an  $x = y$  line, i.e., the slope of the regression line was  $0.76 \pm 0.13$ , not close to 1, and the intercept of the regression line seemed to show a negative value ( $-0.35 \pm 0.43$ ). After the correction of interference in the  $m/z$  31 signals by fragments, we found a reasonable agreement that the data in the corrected PTR-MS versus MAX-DOAS scatterplots (Fig. 6b) gathered along the  $x = y$  line, i.e., the slope of the regression line became close to 1 ( $0.99 \pm 0.16$ ) and the intercept of the regression line seemed not to have a significant value ( $0.02 \pm 0.38$ ). We believe that this is the second meaningful result of the "consistency". In addition, we here tried to consider possible error sources for both the PTR-MS and MAX-DOAS data and put the errors to each data.

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