

Interactive comment on “The impact of monsoon outflow from India and Southeast Asia in the upper troposphere over the eastern Mediterranean” by H. A. Scheeren et al.

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Comments of Anonymous Referee #1

unpublished

1. P6: 'We note that we used the FID instead of the ECD for quantitative evaluation of CH₃Cl to improve the precision.' - Why is that ? The ECD is 100x more sensitive - please elaborate.
2. P6: Nafion drier tube - did you test if this dryer passes the higher halocarbons quantitatively?

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3. It seems that only NO was measured directly, yet the discussion refers to NO_x - please clarify. NO_x composition can vary widely between fresh and aged air masses and NO is not necessarily a good measure.
4. 4.2.3: 'as can be deduced from the average concentration of 576 ± 19 pptv, which is somewhat higher than the CH₃Cl background.' 576 is not significantly higher than 550 plus a more accepted value for background concentration is 580 ppt.

Reply to comments of Referee #1 by H. A. Scheeren

1. CH₃Cl is detected by both the ECD and the FID. We chose the FID quantitative results for CH₃Cl for its higher precision due to larger peak areas and better stability than the ECD output on our GC-system.
2. We use a Nafion drier tube to remove water the sample stream. We have tested the Nafion tube for the NMHC and halocarbon species we present in this paper and found no significant artifacts. We included the following sentence on p. 2290, line 15, after '..of purified dry nitrogen.':

'Tests with the Nafion tube indicated no artifacts for the hydro- and halocarbons species presented in this study.'

3. It is true that NO alone is not necessarily a good measure to represent the NO_x (NO₂ + NO) composition of a polluted air mass. Instead of additional NO₂ measurements, we present measurements of NO_y, which also gives us information about the chemical "age" of the air masses. In the discussion we talk about NO_x because it is represented in our model (and other) studies we discuss in the paper.

4. Based on our own observations as well as the literature, I would argue that the global background is closer to 550 than to 580 pptv. From this standpoint, the value 576 ± 19 pptv is slightly higher (+7 pptv) than the background. We note that the value 576 ± 19 is the mean of 28 measurements with a median of 578 pptv relating to air masses originating over North America and the Atlantic with a high probability to be influenced by forest fire emissions during summer. Hence, we included the median value between parenthesis:

p. 2299, line 26: '(median of 578)' added after '..the average concentration of 576 ± 19 pptv'.

Interactive comment on Atmos. Chem. Phys. Discuss., 3, 2285, 2003.

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