

Interactive comment on “Caution with Spectroscopic NO₂ Reference Cells (Cuvettes)” by Ulrich Platt and Jonas Kuhn

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Interesting paper on the reactions occurring in NO₂ reference cells used in e.g. DOAS spectrometers. A few remarks:

- 1) Any comparison with experimental observations (either from the authors own experiments or from literature) is missing. It is suggested to add such a comparison (if these data are available).
- 2) NO₂ cannot be obtained at high purity from commercial gas suppliers. Some comment could be added about this (i.e., starting mixture will already be more complex).
- 3) Page 11 "One can actually assume that all H₂O is ultimately converted to HNO₃, sequestering equivalent amounts of NO₂ and water. "

This might be expected but apparently this does not happen. At VSL we did some experiments adding water to NO₂ mixtures and only a relatively small part of the water is eventually converted to HNO₃. (see <https://www.hindawi.com/journals/jspec/2018/9845608/>).

4) Topping with dry synthetic air is probably preferred over filling with laboratory air (p11).

5) In equation R20 on page 11 the value of the rate constant is missing.

6) The section on the path length of the optical cells (section 2) is not relevant for the rest of the paper and should be omitted here.

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Discussion paper

