

## ***Interactive comment on “Intercomparison of MAX-DOAS Vertical Profile Retrieval Algorithms: Studies using Synthetic Data” by Udo Frieß et al.***

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The studies conducted in this manuscript use synthetic MAX-DOAS measurement data as input to several different inversion algorithms in order to assess how well the assumed synthetic atmospheric state is reproduced by each individual inversion algorithm.

The underlying idea utilized here - using synthetic MAX-DOAS data to assess, and compare against, the output of an aerosol and trace gas inversion algorithm - seems strangely all too familiar to me (see Chapter 5: "MAX-DOAS inversion sensitivity studies", in: Zielcke, 2015). I am (slightly) surprised that my work is not mentioned here as a former colleague of several years of the lead author. Figure 1 of the manuscript also

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appears to be "inspired" by my Figure 5.1 (p. 66, Zielcke, 2015).

While the saying goes "Imitation is the sincerest form of flattery", the following should be cited in the Introduction (1) or Methods (2) sections as at least one of the underlying foundations of this manuscript:

Zielcke, J. (2015): "Chapter 5: MAX-DOAS inversion sensitivity studies", in: Observations of reactive bromine, iodine and chlorine species in the Arctic and Antarctic with differential optical absorption spectroscopy, Dissertation, University of Heidelberg, <http://doi.org/10.11588/heidok.00018932>

Best regards, Johannes Zielcke

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