

## ***Interactive comment on “Properties of individual contrails: A compilation of observations and some comparisons” by Ulrich Schumann et al.***

### **Anonymous Referee #2**

Received and published: 27 October 2016

This paper nicely sums up findings of several decades of contrail measurements into a comprehensive data base. The presentation of the different measurements is structured both chronologically and with respect to the applied methods (i.e. in situ or remote sensing), and thus, provides insight into the evolution of the respective measurement capabilities. The text is well written and easy to follow.

I suggest publication of the work in ACP after a few minor comments have been addressed:

- there are a number of complex formulas embedded in the text, those should be given their own line
- the paper refers to a number of grey-literature publications that I would usually

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ask to be removed from the list of references but might be needed here for completeness of the data base. Maybe the authors can restrict those papers to the once that are available online or add them to the supplement? I am not entirely certain of the ACP policy in that regard.

- please check if all introduced abbreviations are useful, some of them are only used a few times while others are introduced later in the paper when the respective term had already been used. Also, please stick to abbreviations once they are introduced.
- page 3, line 8: enable instead of provide
- page 3, line 24: omit mainly
- page 11, line 20: please clarify if excluding data from the plots also means that they are not included in COLI
- page 13, line 21: within about 1 km of the tropopause?
- page 14, line 22: please revise the statement: are these possible self-encounters identified from in-situ measurements or the trajectory analysis?
- page 16, line 25: west of Shannon?
- page 19, line 4: is it correct that you combine the measurement with random flight data about 30 years later to determine contrail age? I worry about the feasibility of this approach...
- page 20, line 14: please provide details on the comparison or omit statement
- page 24, line 6: should the total extinction be introduced earlier in the paper?
- page 24, line 27: replace blowing with something less colloquial

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- page 25, line 1: is there a paper that describes how those trajectories have been determined?
- page 28, line 9: CALIPSO is the satellite, CALIOP is the lidar.
- page 37, line 2: Does this mean that all CoCiP data plotted and in the table refer to calculations performed with the ACCRI data set of 2006?
- Figure 3: use the same scale for Fig 3b as for Figs 1b and 2b. It looks like the red symbols in Fig 3b are the same as in Fig 3a and not those in Fig 1b. Maybe that explains the different scale.
- Figure 6: omit the after Difference in the caption

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Interactive comment on Atmos. Chem. Phys. Discuss., doi:10.5194/acp-2016-773, 2016.