

Interactive comment on “Aircraft measurements of wave cloud” by Z. Cui et al.

Anonymous Referee #2

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This manuscript presents observations of wave clouds over the UK. The observational data is well-presented and would be useful for researchers modeling wave clouds. I have only minor comments.

- p. 13343, l. 6: It would be helpful if the authors explain briefly why an inversion layer and this profile of the wind are favourable for the formation of cloud bands over the UK. Given the height of the topography in this region (not stated in the manuscript), is it important that the inversion occurs at $z = 1.8$ km?
- p. 13348, l. 5: The unit should be g kg^{-1} .
- Please compare the droplet size, and droplet number and mass concentration with other observed wave clouds in the literature. Are the droplet properties here within the range of previously observed wave clouds?

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- The aircraft was equipped with aerosol probe, but no aerosol measurements were discussed. The aerosol measurements may be useful in the context of droplet formation.
- Please provide observational data of the relative humidity if available. The relative humidity data is very useful because:
 - Low relative humidity (with respect to ice) completely explains why ice nucleation was absent in these clouds.
 - It can be added to Figs. 4 and 7–9 to show how relative humidity is correlated with temperature and with cloud occurrence.
 - It is necessary for any future numerical study based on these observations.

Interactive comment on Atmos. Chem. Phys. Discuss., 12, 13337, 2012.