

Interactive comment on “On the distribution of relative humidity in cirrus clouds” by P. Spichtinger et al.

Anonymous Referee #1

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This paper analyzes the relative humidity in cirrus clouds at different temperatures in comparison with relative humidity distributions in cloud-free regions. This paper is a generalization of results obtained from a specific measurement campaign to the large MOSAIC dataset. This underscores the fundamental importance of these results and therefore is worth publishing after the following comments have been addressed:

- 1) You refer to figure 2 before referring to figure 1. Please re-order your figures.
- 2) Since you use the L-distribution value of the Gaussian distribution with 5
- 3) page 5, first line and page 6, Discussion, line 5: skew → skewed
- 4) page 6, 3.2, line 16: skewer → more skewed
- 5) page 7, first paragraph: You quote that the cirrus transition time is more than double

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the typical growth time scale. This raises the question as to how you have defined the growth time scale?

6) page 7, below equation 4: The connection between τ_u and τ_g is not apparent to me. Do you simply mean that stronger updrafts result in longer transition periods because they cause higher supersaturations?

7) page 8: How can the number of steps be responsible for the difference between the symmetric and the skewed distribution, given that you explain before that you chose similar total simulation times for these 2 cases? Please clarify.

Interactive comment on Atmos. Chem. Phys. Discuss., 4, 365, 2004.

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