

Review of revised version of

**Satellite observations of cirrus clouds in the Northern Hemisphere lowermost stratosphere**

by Spang et al.

**General comment:**

The manuscript has been improved and all of my comments were addressed in a satisfying way. I have just two minor comments and a technical comment for the new section 5.7. These comments should be addressed before the manuscript can be accepted for publication in ACP.

**Minor points:**

1. New figure 12, top panel: The authors should use a finer axis scale for potential temperature; although the air is “moving isentropically”, a scale in the interval of e.g. [338 : 345] K would be more appropriate. Actually, the air is slightly cooling, probably due to radiation cooling.
2. Page 32, lines 6-8: It is stated here that the vertical positions of the air masses are 400 m above the tropopause. Since the standard deviation of the thermal tropopause as derived from ERA data is in order of 560 m (as described in section 2.5), the interpretation of the trajectory calculations is then not as clear as stated here. Please comment on this issue.

**Technical comment:**

Please use “supersaturation” instead of “over-saturation”, since this is the usual term.