

## ***Interactive comment on “Definition of “banner clouds” based on time lapse movies” by J. H. Schween et al.***

### **Anonymous Referee #1**

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The paper deals with a special kind of orographic clouds called banner clouds. It seems to be part of a more comprehensive research on the physical origin of these clouds. However, in the present paper, only the definition of banner clouds is treated. For this purpose, the authors make use of the new possibilities provided by online-journals in adding video clips on various clouds on mountain tops to their material. This helps to make a clear distinction between banner clouds versus other cloud forms.

As the main purpose of this paper is just to make the reader familiar with banner clouds, the form presented here is suitable for publication. Some interesting questions however are not treated here:

1. What is the vertical extent of banner clouds? Just a few meters or hundred of

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meters?

2. How often do these clouds occur? As the authors have collected a huge amount of data (time lapse videos) it should be possible to provide some information on the statistics.

3. What are the environmental conditions for the formation of banner clouds? E.g. is there a minimum wind speed, which kind of temperature and moisture profiles must exist?

4. Why do banner clouds form only on the leeward side of mountain tops? It becomes clear from Fig.1 and also from the examples in the video clips, that different environmental conditions (different air masses) must exist on the windward and the leeward side. Otherwise, as air is rising (even predominantly) on the windward side, there would be clouds too.

5. What is the physical mechanism of rising air motions on the leeward side of mountain tops? Some hypotheses are provided in Section 2, but no final conclusion is drawn.

All these questions might be answered in forthcoming papers as is announced in the summary, but perhaps some remarks on these questions (especially 1-3) should be made already here. This would help to get a clearer picture of the meteorology of banner clouds beyond their pure definition.

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Interactive comment on Atmos. Chem. Phys. Discuss., 6, 9995, 2006.

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