Hydrology and Earth System Sciences Discussions

Interactive comment on "Applying a time-lapse camera network to observe snow processes in mountainous catchments" *by* J. Garvelmann et al.

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General comments: This study demonstrates the application of numerous digital cameras used to observe snow cover characteristics in the mountains in Germany. The authors present a simple setup and methodology applied for observing different snow cover characteristics. They conclude that the time-lapse photography is an appropriate technique to observe spatial and temporal snow cover variability. The study is interesting and within the scope of the journal. The application of a large number of digital cameras for snow cover monitoring is interesting and the experience and results gathered might be very useful for many different applications. However I also agree with the previous review, that the traceability of results is difficult and some more clarifica-

tions about the applied methodology (i.e. image analysis) is needed. Additionally, I would suggest to emphasize and present in more detail the lessons learned by such distributed sensing. The authors installed and maintained a large number of cameras, so it would be very interesting to know and quantify the problems and challenges - when, where and how it was difficult/easy, if there were some problems clustered in some areas/time periods, etc. E.g. how many photographs were useless, how often and where the snow fall, frost, fog reduced the available images, etc.

Authors Reply: The authors thank Dr. Juraj Parajka for his referee comment and the suggestions on our manuscript. The suggestions of the referee will be considered in the revised manuscript. Especially more details about the experiences we made with the camera network and the image processing will be included. Problems and challenges will be discussed in more detail.

Specific comments

1) Image analysis, p.10692, l.10-15: Please provide more details (i.e. how it was calculated, how many images were discarded, are these clustered in some specific locations, etc).

Authors Reply: This was already suggested by the first referee. Therefore more details about the image analysis procedure will be provided in the revised manuscript.

2) Albedo estimation: Why only 8 stations?

Authors Reply: Probably the referee means the 8 days (instead of 8 stations) of data used to calibrate the albedo values with measurements from a local weather station. This section will be revised anyway in the final manuscript.

3) Discussion: Some statements are not justified by the results presented: Please consider to quantify the number of gaps/specific problems of the data analysis and to relate them to some physiographic settings, if possible.

Authors Reply: We will try to clarify these statements in the discussion section of the

revised manuscript.

Interactive comment on Hydrol. Earth Syst. Sci. Discuss., 9, 10687, 2012.

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