

## ***Interactive comment on “The recent developments in spatio-temporally continuous snow cover product generation” by Xinghua Li et al.***

### **Anonymous Referee #2**

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The recent developments in spatio-temporally continuous snow cover product generation.

By: Li et al.

This study reviews the existing methodologies of cloud removal from optical remote sensing based snow cover data. The focus is given to MODIS snow cover data, which is becoming valuable due to prolonged time series. There has been published several methods focusing on cloud elimination from MODIS data and this manuscript summarizes those existing approaches very well. Thus, it can be of interest to a wider audience interested in snow research.

The study was initially submitted to WRR, where I was assigned as a reviewer as well.

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The comments given then are well considered in this version of the manuscript. The review of existing methods on cloud removal is well structured and easy to read. Only, the connection to UAV in the chapter "future directions" may be irrelevant as they do not provide continuous observation of snow cover that can be used for cloud removal. Moreover, UAVs and satellites observe at different scales, which can be hardly combined. Rather, I suggest to include some text about the potential of Sentinel product in providing snow cover data with higher spatial resolution in the future.

Considering my previous comments and significant improvement of the manuscript, I suggest it for publication in HESS after a minor revision, considering comments below.

General comments:

1. The title of the manuscript does not really reflect the content. The manuscript is about cloud removal approaches and not about the generation of continuous snow cover product. Also, authors can specifically mention the word MODIS in the title as most (if not all) methods use MODIS data for cloud removal.
2. The authors are encouraged to address some words about the potential application of Sentinel product in generating snow cover maps and its advantages and drawbacks with regard to MODIS. This can be discussed in the "future directions" and "conclusions and discussion" chapter.

Technical comments:

1. Insert a tab separation while listing references in brackets in the text.

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Interactive comment on Hydrol. Earth Syst. Sci. Discuss., <https://doi.org/10.5194/hess-2018-633>, 2019.

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