

February 6<sup>th</sup>, 2013

Dear Dr. Bargaoui (HESS Editor):

Thank you for your assistance with the handling of our paper "**A probabilistic approach to removing cloud cover from MODIS Snow Cover Area products**" by V. López-Burgos et al., submitted to HESSD. Attached please find our newly revised (second) version of the manuscript after taking into consideration Dr. Parajka's comments and suggestions.

We thank the referee Dr. Parajka for his insightful and helpful comments, which have helped to improve the paper. And we apologise for the fact that it has taken us about a month to make the necessary revisions. In response to the comments:

- 1) We acknowledge the importance of extending the discussion to include results from other papers and address the seasonal tradeoffs between cloud removal and mapping accuracy.
- 2) We now explain in more detail the Locally Weighted Logistic Regression method, our major part of our contribution.
- 3) We have modified the title in response to the suggestion by Dr. Parajka. The revised title is "*Reducing cloud obscuration of MODIS Snow Cover Area products by combining spatio-temporal techniques with a probability of snow approach*".
- 4) We are, unfortunately unable to include some of the information requested by Dr. Parajka -- specifically, we are unable to add more data to the time series and/or redo the analysis to extract the evaluation statistics on a daily/monthly basis for comparison of the seasonal tradeoffs between cloud removal and mapping accuracy.
- 5) However, we did have access to the stored daily/monthly information from the cloud removal results and were therefore able to discuss this manner in more detail.
- 6) ***In addition, we have added a new table and ask for corrections on Table 2. Please refer to line 540 of the new manuscript.***

Again, we have addressed Dr. Parajka's comments and suggestions to the best of our ability. Thank you for your assistance in handling our manuscript.

Sincerely,

Viviana López-Burgos