

Interactive comment on “A combined Terra/Aqua MODIS snow-cover and RGI6.0 glacier product (MOYDGL06*) for the High Mountain Asia between 2002 and 2018” by Sher Muhammad and Amrit Thapa

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This paper generates snow data derived from MODIS onboard TERRA and AQUA. The paper combines MODIS TERRA and AQUA satellites snow data to reduce uncertainty/bias. The paper uses state of the art technology to generate a new snow dataset for the High Mountain Asia covering the period from 2003 to 2018. The data generation is well presented and the method is stepwise explained. The output is a complete product showing any changes in the original snow product, which is very useful for users. The data has a wide range of applications including hydrology, climate change, hydro-

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glaciology, and modelling. I have few minor comments for the authors to address in order to improve the readability of the paper. 1. As Per the definition, maximum snow product has the tendency to overestimate snow. If there is a short term snow cover in lower elevation where the snow is not stable over time, the maximum approach results in more snow than in reality. It is important to know why 8-day composite data is used and why the authors prefer this product than the daily products? 2. There is a short temporal difference between both MODIS and Landsat, how did you manage to compare one single Landsat data set with an 8-day maximum composite and Why did you resample MODIS to Landsat-pixel size and not vice versa? 3. How many days temporal filter is applied in this study, it is unclear. 4. Combining Aqua and Terra → This might be correct. But the retrieval accuracy changes due to different illumination conditions between Terra and Aqua. It has to be shown in detail, that the snow product (daily basis) between Terra and Aqua is more or less identical. Especially in rough topography there is a difference between both snow products. 5. Equations 4 and 5 seems identical, what exactly is the difference?

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