

Interactive comment on “Validation of the operational MSG-SEVIRI snow cover product over Austria” by S. Surer et al.

Anonymous Referee #2

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Overall comments

The paper describes the capabilities of SEVIRI instrument on board of MGS satellite to map snow cover, especially, in mountainous areas. In the paper the authors have validated the SEVIRI snow classification product to in situ snow measurements (snow depth) and snow classification made from MODIS sensor on board of EOS Terra satellite. The major difficulties in this comparison is the limited number of in situ observations in various elevation zones and the spatial resolution of SEVIRI and MODIS snow products. The paper is well written and analysis are thoroughly considered. A big problem is how well 5 by 5 km pixels describe snow cover in high topographic areas when compared to 0.5 by 0.5 km pixels. This surely is large source of classification differences between these two products. However, SEVIRI product has much better

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temporal resolution and, therefore, less cloud contamination. The authors show in the paper that poorer resolution geostationary satellite products have classification results close to better resolution LEO satellites that are traditionally used to mapping seasonal snow cover. However, one wonders why the authors have not considered exploiting the temporal resolution of SEVIRI product and, especially, better cloud free observations to update classification in MODIS cloud contaminated pixels. This approach should at least be considered in Discussion Chapter.

Detailed comments - Figure 1 seems to be unrealistic. Large areas in Finland and Russia seems to be snow-free in February. - The authors should consider what kind of errors in classification is caused by the different viewing geometries of the two sensors (GEO vs. LEO).

As overall assessment the paper shows good scientific capability and is absolutely worth publishing after minor corrections.

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