

The Cryosphere Discuss., referee comment RC2  
<https://doi.org/10.5194/tc-2021-172-RC2>, 2021  
© Author(s) 2021. This work is distributed under  
the Creative Commons Attribution 4.0 License.

## Review comment on tc-2021-172

Anonymous Referee #2

---

Referee comment on "Brief communication: Evaluation of the snow cover detection in the Copernicus High Resolution Snow & Ice Monitoring Service" by Zacharie Barrou Dumont et al., The Cryosphere Discuss., <https://doi.org/10.5194/tc-2021-172-RC2>, 2021

---

### GENERAL COMMENTS

The manuscript evaluates the performance of the High Resolution Snow and Ice (HRSI) snow cover product in Europe against in-situ observations in September 2017 – October 2018. An advantage of this product over other available satellite-derived data sets is its high spatial resolution (20 m), which greatly facilitates its interpretation in areas with inhomogeneous snow conditions. The HRSI product and the in-situ data are found to agree on the absence/presence of snow cover in 94% of cases, which is certainly satisfactory for most applications. The dependence of the agreement on the land cover type, tree cover density, elevation, month and country of measurement is also studied. The results reveal, perhaps unsurprisingly, a somewhat lower performance in areas with dense tree cover where snow is easily masked by the forest canopy.

The text is well written and the three figures nicely summarize the main findings. Therefore, I recommend the acceptance of this brief communication subject to a few technical corrections, as detailed below.

### DETAILED COMMENTS

- The accuracy (proportion of correct classifications) was 94 % ( $\kappa = 0.83$ ). Based on the parentheses, one could read that the proportion of correct classifications was 0.83, although it is probably meant that accuracy is just a synonym for the proportion of correct classifications. Please revise the sentence to avoid this risk of misunderstanding.
- sensitivity to this threshold?
- at least one external data set / at least one of the external data sets?
- A reference to the definition of kappa would be useful.

- L88, L106. "Results" should be Section 3 and "Conclusions" Section 4.
- Check the alphabetical order in the list of references.
- L207-208 (Caption of Fig. 2). Please specify the value of  $HS_0$  used for the right-hand-side matrices.