

Interactive comment on “Evaluation of seNorge2, a conventional climatological datasets for snow- and hydrological modeling in Norway” by Cristian Lussana et al.

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Dear Referee,

the main comment is on seNorge2 performances. The presented work on seNorge2 aims at optimizing the statistical interpolation method, without relying too much on geographical information and without adjusting for the wind-induced undercatch of solid precipitation. We plan to further develop the seNorge2 dataset, as pointed out in the manuscript. On a daily basis seNorge2 seems to estimate precipitation at ungauged location reasonably well (see Figs.3-4). When accumulating precipitation over long time periods (such as in Fig. 6), seNorge2 is more likely to underestimate precipitation

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than seNorge1.1 (which overestimates quite a lot). Perhaps, we have failed to highlight an important point of Fig. 6, that is that seNorge2 stay closer to the regression line. The post-processing of seNorge2 can correct for the underestimation (i.e. slope in the regression line towards the 1:1 line, thus adjusting for the lack in accuracy) but it is extremely hard to increase the precision/correlation (i.e. if an event is missing in the dataset, there's no way for a post-processing procedure to improve the situation). The calibration of snow and hydrological models includes such a post-processing phase, thus reducing the impact of current seNorge2 deficits. As suggested by the Reviewer, we will include a comparison between analysis and observations for selected points. Hopefully, it would help in better explaining seNorge2 performances. Besides, we are considering to include other observational gridded datasets in the comparison of results, such as EOBS (Haylock et al. 2008).

About the other recommendations: we will change the title, better explain the domain definition and the use of stations outside the domain to reduce border effects. We will reorganize the paper following your suggestions.

We are grateful for the time and efforts you put in reviewing the manuscript.

Best Regards, Cristian Lussana

Reference: Haylock, M.R., N. Hofstra, A.M.G. Klein Tank, E.J. Klok, P.D. Jones, M. New. 2008: A European daily high-resolution gridded dataset of surface temperature and precipitation. *J. Geophys. Res (Atmospheres)*, 113, D20119, doi:10.1029/2008JD10201

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