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The Cryosphere
Discussions

Interactive comment on "Simulating snow maps for Norway: description and statistical evaluation of the seNorge snow model" *by* T. M. Saloranta

Anonymous Referee #2

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The research objectives of are clearly stated and the discussion and results answer those objectives. A very through description of the seNorge model and analysis of model outputs. Analysis is thorough; explains model output compared to observations over different regions and times so has valuable spatial and temporal information regarding seNorge accuracy and biases. Limitations on use and quality of the seNorge snow model results are well presented. A well written manuscript with very good quality graphics. Its a good contribution to the community.

I think that the manuscript could be accepted as is, though I do have comments that the author may want to consider a response to in the manuscript. One comment is a question to the author about the possibility of using data assimilation in the model or if data assimilation is a technique that could improve model output. A response to that

question might be appropriate in the Conclusions and is up to the author's discretion.

Specific comments Section 2: Are the SWE model and Snow pack compaction models good models: are they physical correct in representing SWE and snow compaction? There needs to be some discussion of the accuracy of the model parts, in addition to the discussion and analysis of the outputs.

Pg 1355 line 25, and Conclusion: Is seNorge re-calibration the only option? Since there are limited SD, snow density and SWE observations made over all of Norway, would an increase in the number and frequency of those measurements increase model accuracy and decrease biases? Could snow observations be assimilated into the model? Probably not possible to assimilate into seNorge as is but, is assimilation a technique that could improve modeling of snow cover in Norway?

Interactive comment on The Cryosphere Discuss., 6, 1337, 2012.