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Interactive comment on "Estimating spatial distribution of daily snow depth with kriging methods: combination of MODIS snow cover area data and ground-based observations" *by* C. L. Huang et al.

Anonymous Referee #2

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1) Originality (Novelty) Using multivariate geostatistical estimation for the spatial snow is not new to the extent that very often the snow measures are actually very few stations. While the use of variables significantly correlated with measures is widely used.

2) Scientific Quality (Rigour) The use of multivariate approach requires a very strong correlation between the snow value measured at the station and the elevation at that point. It would have been interesting to show for some dates and some stations a diagram showing this correlation. It will be also interesting to show (for some dates ex 10 dates used by the authors) semivariogram of elevation as co-variable and Cross

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semivariogram of snow depth x elevation in co-kriging and semivariogram of residuals (giving by the regression between elevation and snow depth). This results are important to show how level of spatial dependence exist. No errors maps are giving in Figure 6

3) Significance (Impact) The significance of this paper to change our scientific understanding of a subject is poor. There are many papers published on the subject since last ten years. In and numerous publications several covariates are used. Authors should therefore review the references to at least mention these works.

4) Presentation Quality fair

Interactive comment on The Cryosphere Discuss., 9, 4997, 2015.