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Comment

## ***Interactive comment on “Snow cover thickness estimation by using radial basis function networks” by A. Guidali et al.***

**A. Guidali et al.**

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We thank the anonymous referee for the useful comments and we replay to him/her on the main arised points as follows:

1. Referee Comment: The manuscript would be greatly improved by the inclusion of a summary of the use of neural networks to predict snow cover, snow thickness, and SWE to date using remote sensing data in combination with field measurements. . .

a. Authors Reply: A new section has been inserted in the paper dedicated to a review of the literature related to the use of neural networks to predict snow cover, snow thickness, and SWE. With this revision we met also one of the requirements of the first referee (See the replay AC1669 at point 2)

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2. Referee Comment: ...so the novelty of this work would need to be better explained...

a. Authors Reply: Thanks to the literature review related to the use of ANNs in snow parameters estimation it has been possible better highlight the contribution of our work. From the literature we deduce that: RBFNs have been used in few and occasional works then there is the need of further investigation in general; the development of a snow parameter estimation study without the support of reliable information extracted from remote sensing data needs a detailed exploration; different neural models are adopted for the estimation of different snow parameters. As described by the sentences at the end of section 2 our study address all the above aspects.

3. Referee Comment: There are several primarily technical issues with the manuscript as well, some stemming from the translation of a computer science field to snow science, and others strictly grammatical...

a. Authors Reply: The whole paper has been revised following the suggestions of the referee both for the translation of some idioms typical of the computer science field to snow science, and for grammatical correctness.

4. Referee Comment: I think that overall accuracy, producer accuracy and user accuracy have to be defined here...

a. Authors Reply: All the evaluation metrics are formally defined in section 7

5. Additional Revision: Section 6.2 has been rewritten in an attempt to improve clarity

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Interactive comment on The Cryosphere Discuss., 6, 2437, 2012.

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