

Snow depth plays a critical role in the estimation of snow water equivalent (SWE). Snow depth data from measured ultrasonic instruments are an essential part of the validation and assimilation of these models. This paper showed that a Random Forest classifier can be used to train and perform classification of snow depth from weather stations to snow/bare ground. This will help to reduce noise in SWE model coming from the misclassification of the snow depth data. In general, this a well-written paper with clear objectives, results and discussion. I recommend this paper for publication with only a few minor comments.

Specific comments:

L31-L34. This sentence is long. Consider splitting into smaller sentences.

Section 2.2. Can you give more details on how this dataset is different or not from the training set? This is not evident if you are not familiar with this region of the world.

Section 2. Do all sensors were similar ultrasonic sensors? Any effect of the different sensor types?

L116-L117. Consider adding a citation that relates snow depth to random forest. I can think of a couple.

L114. Some feature importance calculations can have a bias due to the correlation between features. This will split the importance between features (Strobl et al. 2007). Even if the feature seems uncorrelated in this case. Consider adding a sentence to acknowledge this.

Figure 4. Typo in label of graph b). "Ground" should be ground.

Reference

Strobl et al, 2007. Bias in random forest variable importance measures: Illustrations, sources and a solution. DOI : [10.1186/1471-2105-8-25](https://doi.org/10.1186/1471-2105-8-25)