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Review of manuscript “The role of sublimation as a driver of climate signals in the water isotope content of surface snow: Laboratory and field experimental results” by Abigail Hughes and others.

This work is devoted to the investigation of the post-depositional changes of the snow isotopic composition due to the mass- and isotopic exchange between snow cover and the overlying atmospheric water vapor. The authors use the results of laboratory experiments, as well as of two types of field experiments, to show that the isotopic composition of the uppermost few cm of snow may change at hourly time-scale due to these processes. The obtained results are quite interesting and important as another step towards a comprehensive transfer function between isotopic content of precipitation and that of an ice core.

I have a few minor comments and questions as listed below:  
Figure 1 - photo of the experimental set-up would be relevant.

Photos of the experimental setup have been added to Appendix A.

Lines 111-112: “Three Pico Technologies PT-104 Data Logger temperature sensors were placed in the box to record continuously; one 10 cm above the snow surface” – based on the figure 1, the upper sensor is placed about 20 cm above the snow surface.

The height of the sensor in Figure 1 has been adjusted to be better to scale at 10 cm above the snow surface.

Line 134: “wind speeds below 10-12 knots” – meters per second is a preferable dimension in meteorology.

We have changed “10-12 knots” to 5-6 m/s”

Lines 136-137: “Sampling boxes were partially buried in the snow surface, and protected from direct overhead sunlight using a cloth covering” – why did not you bury the boxes completely in the snow (so that the level of snow in and around the box is the same), and why did not you use a white (a sunlight-reflecting) material for the box?

If the level of snow surrounding the box was at top of the box, the risk of wind-blown snow grains contaminating the samples may have been higher. While we completed experiments under low wind conditions to mitigate this risk, we chose to only partially bury the boxes to keep the risk of contamination as low as possible. While white boxes may have reflected sunlight better and could certainly be used in future follow-up experiments, the clear boxes were what we had available in the field.

Line 139: “which would have otherwise led to melt of the snow not otherwise occurring” – this sounds a bit awkward to me, please consider rephrasing.

“Which would have otherwise led to melt of the snow not otherwise occurring” has been changed to “which may have led to melt of the snow samples”.