

Interactive comment on “Understanding snow-transport processes shaping the mountain snow-cover” by R. Mott et al.

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Mott et al., (2010) provide a valuable detailed analysis of the impact of wind on snow transport, deposition and erosion during the accumulation season in alpine terrain. The paper is well written, easy to follow, and thought provoking. The following comments are areas where more detailed would have been appreciated by this reader.

869-14: Most importantly there is not a detailed listing of the meteorologic variables captured at the SensorScope and WAN locations. A table would perform this task well. In particular what is the height at which wind is recorded and over what time interval is the wind speed and direction averaged?

873-1: Was WAN 7 chosen for the snow depth because of its flat and wind protected

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location?

873-3: Why was WAN 2 chosen for this analysis?

876-10: Associated with wind cornice deposition there are sometimes parallel areas of wind erosion-or at least diminished accumulation. Figure 8 has some suggestion of this is either limited accumulation or wind erosion significant.

867-20: Why the tendency of the 2008/09 events in Figure 5 to have much more pronounced wind erosion on the margins of the NE slopes?

878-7: It is mentioned that cornice development is continuous during the study. Does the examination of the cornices extend through the entire accumulation season? There are some cornices I have observed that reach an aerodynamic shape at some point in the accumulation season and grow no further. Is this what is observed at 878-22?

880-13: This is exactly what we have observed in the bowl of Columbia Glacier, North Cascades, WA, where we have used a snow depth grid spaced at 25 meters in mass balance work.

883-7: Given the goal of developing coherent scaling parameters relating wind speed to snow deposition, what resolution of snow depth measurements alone would be needed to use as input to determine the wind field?

Interactive comment on The Cryosphere Discuss., 4, 865, 2010.

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