

***Interactive comment on “Surface formation, preservation, and history of low-porosity crusts at the WAIS Divide site, West Antarctica” by John M. Fegyveresi et al.***

M. Schneebeli (Referee)

schneebeli@slf.ch

Received and published: 29 July 2016

**Suggestions for revision or reasons for rejection (will be published if the paper is accepted for final publication)**

**"firn" and "snow" are now used inconsistently in the manuscript. Please define the term. In my opinion this is always snow, as (1) density is below 550 kg m<sup>-3</sup> (2) temperature gradient metamorphism dominant (3) the age of the porous ice is irrelevant for the physics.**

We have corrected all instances of “firn” to “snow” where appropriate based upon reviewers suggestion. Two instances were left as “Firn” as it was appropriate based on discussion of deeper sections within the firn. (see lines 77 and 270)

**The surface energy budget (lines 363 ff) and Fig. 18 seem to contain a major error: turbulent and latent heat fluxes seem to be too high by a factor 100. Please check.**

We did find an error in the calculation of the turbulent fluxes (based on an incorrect use of the roughness parameter) and we thank the reviewer for noting this. This has been corrected in the text and figure. Our overall result for DeltaT calculation changed only slightly however, as the time period of interest was during a low wind episode (and therefore low turbulent fluxes). See text for updated results. In addition, we’ve reworded the text slightly in this newer section for clarity (~lines 370 – 420).

**Note to Editor:** We have moved the corrected Figure 18 to the supplemental document (Supplemental Fig. 7). While related to the new text and energy balance study, based on the nature of the calculation, we didn’t feel it was absolutely necessary to include in the primary text. We do still feel it’s worth keeping for reference however, and thus moved it to the supplemental doc. If this is unacceptable, please let us know and we will move it back.

**Note to Editor:** References have been updated and DOI numbers added/corrected.