

Interactive comment on “An assessment of sub snow GPS for quantification of snow water equivalent” by Ladina Steiner et al.

Ladina Steiner et al.

ladinasteiner@ethz.ch

Received and published: 12 September 2018

Thank you for your interest in our research work and your comments. A comparison of our methods and results would indeed be very interesting.

The Widelane linear combination is assessed together with different processing methods in order to investigate the impact of the GPS processing on the SWE estimation. However, we recommend to use the L1 SWE fixed or L1 float method as only single frequency data is needed. Thus, our method would also be well suited for low-cost GPS systems.

We added a sentence about your study site in the introduction.

Regarding the L1 SWE fixed processing: As we understand from Henkel et al. (2018),
C1

you process the GPS data in standard double difference mode, estimate and fix the ambiguities, and compute observation residuals. The SWE is then estimated from these residuals. In a certain sense, this corresponds to the L1 fixed solution in our paper, where we first fix the ambiguities and subsequently estimate the SWE in an additional step. Our study, however, clearly shows that a simultaneous SWE estimation together with ambiguity resolution (L1 SWE fixed) is advantageous especially during wet snow periods.

Regarding page 5, line 23: By applying the assumption of a single water layer there is no need to separate between different snow wetness types at all, which is a great advantage of our approach.

Interactive comment on The Cryosphere Discuss., <https://doi.org/10.5194/tc-2018-147>, 2018.