

Interactive comment on “Exploring uncertainty in glacier mass balance modelling with Monte Carlo simulation” by H. Machguth et al.

Anonymous Referee #1

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This paper is a significant contribution to today’s state of the art in glacier mass balance modelling. It gives a quantitative insight in the effects of both the systematic and random uncertainties in the modelling. From the point of scientific conciseness, there is little to criticize. The only questions that could arise are - is there a possibility to derive temperature lapse rates from all the four stations in the vicinity of the glacier, e.g. by kind of a spatial interpolation considering topography? - of course Samedan is not the optimal location to provide lapse rates for the glacier area. The lapse rate on a glacier is influenced by the surface temperature (max. 0 °C), whereas at the valley stations, the ground can be much warmer - a short discussion of the effect of glacier dynamics could be included: how far have the AWS and the stakes moved downvalley during the 11 years of observation? Which are the implications for long-term, distributed glacier

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mass balance modelling? - in table 1, thickness should be written with double s - in the caption of fig. 1, rectangel should be written as rectangle Congratulations, this is an important, very-well done contribution to TC and deserves publication (almost) as it is.

Interactive comment on The Cryosphere Discuss., 2, 447, 2008.

TCD

2, S227–S228, 2008

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