

Interactive comment on “Degree-day modelling of the surface mass balance of Urumqi Glacier No. 1, Tian Shan, China” by E. Huintjes et al.

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The approach to augment temperature data with radiation data is certainly correct as temperature is only a proxy for the radiation energy input. This is particularly true in arid subtropical mountains where advected energy will not play a particularly important role. In this respect Mauri Peltos remark on the role of sublimation also points out that the radiation term in the energy balance of subtropical glaciers needs particular attention. However it is only shortly mentioned that radiation input is calibrated against clear sky radiation - obviously the contribution of cloudiness in the energy balance is not accounted for. Again this is not mentioned in the parameter calibration section nor is the inevitable over-estimation of incoming radiation included in the discussion or conclusion sections. Here you only find that melt is overestimated because of an

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underestimation of precipitation.

A more suitable approach would be to use cloudiness values/radiation data (either from satellite data or from the Glacier Research Station not far away) to modify the radiation contribution.

In addition there a a number of occasions where you find expressions like 'within reasonable limits' or 'reproduced in a satisfactory way'. I propose to give the concrete values obtained and correlation coefficients instead of qualitative remarks so the reader can judge for himself.

Interactive comment on The Cryosphere Discuss., 4, 207, 2010.

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