

Dear Pr Massimo Frezzotti, Dear Pr van den Broeke,

Thank you for your careful reading.

All of your comments have been taken in account in the revised paper, except 2 of them :

I. 690: high latitude -> valley (one was in the Alps if I remember correctly)

You are right, according to Denby, 1999, the model has been validated on 3 glaciers : one in Groenland, one in Island, one in Austria. We chose 'two high latitude glaciers' because we are presently interested in the two first cases and not in the valley case.

I. 738: inverse sublimation -> deposition (riming)

We prefer keeping the term 'inverse sublimation' which is defined earlier.

Other comments and modifications :

I. 919: condensation -> deposition (riming)

Here condensation refers to condensation in the atmosphere (responsible of cloud formation) and not to condensatin at the surface. We dropped this word because it was not essential here but misleading.

This is not because condensation and snowfall largely increases over such short distance, → This is not because snowfall largely increases over such short distance.

Line 146-149 rephrase

The sentence has been changed to

Because winds are remarkably persistent at D17, wind ventilation of the radiation shields that house the thermometers prevents warm biases as reported by Genthon et al. [2011] on the Antarctic plateau.

I. 299: what are "synoptic effects"? Please explain or remove

we changed *synoptic effects* to *fast synoptic variability*.

I. 500: Bintanja and VAN DEN Broeke (1995). That would be me.

I am very sorry. We corrected.

I. 708: the flow is turbulent and rough, wind profiles are expected to be logarithmic -> the surface is rough and hence the flow turbulent, and wind profiles are expected to be quasi-logarithmic

This sentence has been removed. In the following sentences logarithmic has been changed to quasi-logarithmic.