

Thank you for the review and acceptance. We have made the requested corrections. Please find our answers below.

Many thanks for the revisions to your paper. This is now much more succinct, with clear implications for the numerical weather and hydrological prediction communities. This paper should be published subject to the following technical corrections:

Line 193. Remove 'so-called' and change 'vegetation dependant -constant' to 'vegetation-dependent constant'

Thank you for pointing these out. They are now corrected as requested.

Line 341. Change 'In total of ca. 290....' to 'In total, 290...' or 'A total of 290...'. Is there some uncertainty around the number of simulations that were conducted? I just wonder about the use of ca. It's better to be precise if you can.

Indeed the 'ca 290' was too vague and actually did not include simulations that were only plotted for the supplement (35+35 simulations of ISBA-VS with $w_{sw} = 0.2$, and a simulation where vegetation fraction was assigned to unity). We also noticed that these simulations were not mentioned in the Section 2.5. (Model Experiments). These are now added at lines 337-342 (see small changes for this paragraph):

“On the forest sites, we examine the skills of the different alternatives to represent the energy and mass budgets of soil and vegetation (ISBA-VS, ISBA-FS, MEB in Sect. 2.3.1), and their implications on snow depth, soil temperature and surface energy fluxes. First, we compare ESCROC-E2 simulations with these three configurations focusing on the snow depth and soil temperature. These ISBA-VS simulations are conducted with the default snow cover fraction parameterization ($w_{sw} = 5$ in Eq. 8). Additional ISBA-VS simulations are performed to assess the sensitivity of the w_{sw} parameter, using a value of 0.2 in Eq. 8. For a more detailed comparison of the simulated and observed above-canopy surface energy fluxes ~~by ISBA-VS and MEB~~, we conducted deterministic simulations with both ISBA-VS and MEB, the default snow cover fraction and Crocus parameterizations (as in Fig 2. in Lafaysse et al. (2017)). Additionally, we perform a deterministic ISBA-VS simulation with the default snow cover fraction parameterization, but the vegetation fraction set to unity.”

Then, we have also corrected the simulation count to be more precise and to contain all the simulations that were necessary to produce the paper (including supplement):

“A total of 361 ensemble and deterministic simulations were conducted.”

Please run all figures through a colourblind checker and amend colours as needed. Figure 5 and 9 are hard to decipher under Blue-blind / Blue-weak configurations (<https://www.color-blindness.com/coblis-color-blindness-simulator/>). I did not check them all.

Thank you for the colour check. We have now checked all the figures with following changes:

- The red colour of Figs 9, 10 and S3 was darkened.
- Colours of Fig. 5 were updated. This one remains a bit challenging as it has multiple overlapping colours but the updated colour combination is clearly better.

Line 585. Please rephrase 'we found MEB to systematically simulate too early snowmelt' e.g. to 'we found MEB to simulate snowmelt too early' ('systematically' is tricky to place grammatically and I don't think it adds anything).

Thank you, we have corrected this as requested. In addition, we changed our writing of 'snow melt' to 'snowmelt' throughout the paper.

Line 622. 'miss-match' -> 'mismatch'

This was corrected.

Finally a comment on line 72 - no changes needed because this statement is technically true as far as I'm aware. However, the phrasing makes it suggest that it is not worth undertaking a literature search, whereas there is more out there. Although this paper doesn't focus on turbulent transfer or soil properties, if you or anyone reading this would like to access the dataset on subcanopy energy fluxes and snowpack measurements behind <https://doi.org/10.1175/JHM528.1>, please get in touch with me!

Thank you for the comment and sharing a reference paper with a useful dataset. We added it as a citation:

"The forest snow model evaluations against concurrent snowpack and surface energy balance data are also surprisingly scarce (e.g. Tribbeck et al., 2006)."