

I would like to thank the authors for the additional effort they put in the revision of the manuscript. Please find below some additional final remarks (line numbers refer to the revised manuscript with marked changes):

Title: the model version changed from 4.2 to 4.1 – is that correct (i.e. intended)?

L186: I would remove the reference to Zakšek et al. (2011). They define the sky view factor simply as the fraction of the visible sky – in contrast to studies like Dozier and Frew (1990) and Helbig et al. (2009), which apply the correct definition of the sky view factor for radiation purposes.

L196: I'm still a bit puzzled by the approximation of the terrain configuration factor. Wouldn't the simple approximation $C_t = 1.0 - V_d$ be more accurate?

L203: I would explicitly state that the solar incidence angle is measured relative to the normal of the **horizontal** surface.

L497: "can be in principle be applied" → "can in principle be applied"

L549: I agree that a higher sub-grid tile structure would only be needed in areas with complex terrain. However, would the current model architecture be able to handle such an "unbalanced workload"? For instance: one computer cluster node would have to process a domain slice with complex terrain, while another one would process a domain slice with flat terrain. Would the former node not simply slow down the latter and thus determine overall run time? Or is your model able to distribute such an unbalanced workload evenly?

Fig. 2: The degree symbol is missing for the cardinal directions.

Fig. 3: I think I start to understand the splitting of ESM grid cells better but I still struggle to grasp the full details (after looking at Fig. 3 and re-reading Sect. 2.4). I think a reader would understand the splitting better if you illustrate the different stages by means of a single ESM grid cell. The smallest sub-grid units of the cell could then be colour-coded according to the current splitting/clustering stage. I.e. in a first stage, all units would have the same colour. In a second stage, you would have three colours (according to left side, right side and headwaters). And so on...