

Interactive comment on “TOPMELT 1.0: A topography-based distribution function approach to snowmelt simulation for hydrological modelling at basin scale” by Mattia Zaramella et al.

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Dear authors,

I evaluated your manuscript and I include a commented version of it.

I summarize here my major concerns:

LUMPED? SEMI DISTRIBUTED? Here is the definition of lumped very broad and actually the implementation with elevation bands and radiation index classes heavily reminds me the definition of hydrological response units, also a semi-distributed approach. I think your approach is much more semi-distributed than lumped.

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INPUT PRECIPITATION Please expand on the techniques declared at page 4.

LIST OF VARIABLES I would welcome a Table with a list of the used abbreviations.

"DYNAMIC" RADIATION AREA AND INDEX: If you had static radiation regions instead of radiation classes you would not need the supplementary workaround for updating the states with a "migration". Can you better justify your choice, or, even better, compare you results to a version with static radiation sub areas selected using elevation, aspect and/or slope?

Best regards

Massimiliano Zappa

Please also note the supplement to this comment:

<https://www.geosci-model-dev-discuss.net/gmd-2018-202/gmd-2018-202-RC1-supplement.pdf>

Interactive comment on Geosci. Model Dev. Discuss., <https://doi.org/10.5194/gmd-2018-202, 2018>.

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