

**Second review of manuscript gmd-2021-352 "Benchmarking the vertically integrated ice-sheet model IMAU-ICE (version 2.0)" by C.J. Berends et al.**

There are still a few minor comments from my side:

P4,Eq.(1): The meaning of the x and y indices and the bar above the variables is still not given in the text. Please add.

P6,L6-8: I suggested to remove "the square of" because otherwise from that sentence one would deduce that Feldmann et al, 2014 and Leguy et al, 2021 also use the square of the grounded fraction. Just wanted to point to this again but would leave it to the authors to change the statement or not.

P17,L15: The authors announced but missed to include the reference Robin (1955).

P21,L9: investigating → investigation

Points from my first review that were announced to be addressed by authors but apparently were not:

My point:

*P4,Sec.2.2: The introduction mentions the advantages of the DIVA approach compared to the hybrid SIA/SSA approach and briefly mentions which stress terms the DIVA approach covers. Sec. 2.2, that includes the mathematical equations of the stress balance would be suited to refer to these stress terms. I suggest to name which of the shown equations/terms correspond to which stress terms (SIA, SSA and additional stresses that are not captured by the SIA/SSA). That would give a lot more clarity on what the actual difference between DIVA and hybrid SIA/SSA is.*

Author response:

*We will add these clarifications to the text immediately after Eq. 1.*

I could not find the clarifications mentioned by the authors. If they are somewhere else, please indicate line numbers.

My point:

*16,L14: I would be interested in more details on the simplicity of the mentioned rheology, damage and subglacial hydrology. I recommend to discuss them here or to present details in the section 2.*

Author response:

*We will briefly mention the treatment of rheology and damage in section 2. The (lack of) treatment of subglacial hydrology is already included in the description of basal sliding; pore water pressure is calculated solely based on bedrock elevation, following Martin et al. (2011).*

I was not able to find the announced additions to Sec. 2 regarding the ice rheology and damage. Please indicate line numbers on where the changes were made.

Best wishes,  
Johannes Feldmann