

T. Kleiner et al.

We thank the editor Frank Pattyn for his comments and corrections on the manuscript. The spell corrections and word replacements have been incorporated in the text as suggested. Two incorrect “-” in Equations (4) and (6) have been removed. We paraphrase the editor requests or comments below in blue with our reply in black.

**EC:** page 3, lines 23–27: Does this make the experiments still useful? You should add (despite the lack of compensatory terms and real-world simulations) what the main strengths of the intercomparison are.

**AC:** The fact, that additional compensatory terms as in ‘constructed exact solutions’ are not required for the proposed experiments is an advantage. To clarify this we have added one sentence at the end of the paragraph: “While artificially constructed exact solutions require additional compensatory terms to be incorporated in the numerical model (e.g. Bueler et al., 2005, 2007), the proposed experiments are chosen in a way that numerical models should be able to perform them with no or only minor modifications of their source codes. **Therefore it is ensured, that the models run through the same model components and execute the same code for the proposed numerical experiments and for real-world simulations.**”

**EC:** page 16, lines 16–18: rephrase

**AC:** This part now reads as: “In the TIM-FD<sup>3</sup> simulation with the coarsest resolution ( $\Delta z = 10$  m), the enthalpy difference  $\Delta E$  is largest at the base ( $\sim 2530$  J kg<sup>-1</sup>). As the base is temperate, this difference in the enthalpy corresponds to a difference in the basal water content of  $\sim 0.8\%$ .”