

Interactive comment on “The improvement of soil thermodynamics and its effects on land surface meteorology in the IPSL climate model” by F. Wang et al.

Anonymous Referee #1

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1. This paper seems more like a sensitivity study on soil properties (constant vs. functions of soil moisture), modeled soil depth (5m vs. 8m), and heat convection by rainfall. It is rarely compared to observational data, so I did not see any "improvements", which I thought should be concluded from evaluations against observations.

2. It is not clear to me what thermal conduction processes were represented in the baseline model. What are the differences between the new one and the baseline model? What made the authors develop the new model?

3. Please refer this paper on heat convection in the soil:

Impact of precipitation-induced sensible heat on the simulation of land surface
C2468

air temperature N Wei, Y Dai, M Zhang, L Zhou, D Ji, S Zhu, L Wang Journal of
Advances in Modeling Earth Systems 6 (4), 1311-1320

4. It is not clear what the conclusions are drawn from the experiments. Please revise Section 5. summary and discussions to split it into discussions and conclusions.

Interactive comment on Geosci. Model Dev. Discuss., 8, 8411, 2015.