

Interactive comment on “The Interactions between Soil-Biosphere-Atmosphere (ISBA) land surface model Multi-Energy Balance (MEB) option in SURFEX – Part 1: Model description” by Aaron Boone et al.

Anonymous Referee #1

Received and published: 7 December 2016

This paper described an improved version of ISBA for better representation of the land surface processes. I found this paper to be well organized and written and also valuable for the land surface modeling community. Therefore, I propose minor revisions before accepting the paper for publication.

I propose a small change in title “The Interactions between Soil-Biosphere-Atmosphere land surface model with Multi-Energy Balance option (ISBA-MEB) in SURFEX”

P3. L. 63-69: Re-phrase the paragraph describing the different application of ISBA. Possibly break the sentence to multiple sentences each describing one of the ISBA

[Printer-friendly version](#)

[Discussion paper](#)



application. For example “ISBA has been used in operational high resolution short term numerical weather prediction It also has been employed in climate research studies”

P3. L75: Remove this phrase “by improved realism with respect to for example” then rephrase to “The force-Restore approach of ISBA has been replaced in recent years by multi layer explicit”

p3. L90: The last sentence is unfinished!

P4. L93: change “lessening” to reducing or minimizing.

P5. L.130-135: Needs some correction in the text. For example: put parenthesis around “Smith et al. (2011)” and “Zhang et al. (2014)”. “over Europe by Wramneby”

P6. L.171: by DIF do you mean ISBA-DF in Boone et al. 2000? what ES stands for? Line 4: is it 12 soil layers? what is the total depth of the soil?

P6. L.188: Define Va

P6. L. 189-191: Re-phrase “ equations for the evolutions o the bulk vegetation canopy temperature, T_v , the snow-free ground surface (soil-litter) temperature, T_g ,”

P6. L. 192: change to “equivalent water content of ice” or “ice water equivalent (IWE)”

Fig 1: the colors in the picture is not as indicated in the text.

P8. L 233: should be Eq. 5

P8. L225-227: Define other parameters in Eqs 4-6 (e.g. H, LE, Rn, G, SW) with their units.

P11. L354. Shouldn't be qsatin based on eqs 19, 20?

P16. L490. Are emissivities defined based on the vegetation classes?

Printer-friendly version

Discussion paper



P20 L. 637: Correction “soil liquid water content and water content equivalent of frozen water”

Interactive comment on Geosci. Model Dev. Discuss., doi:10.5194/gmd-2016-269, 2016.

GMDD

Interactive
comment

Printer-friendly version

Discussion paper

