Geosci. Model Dev. Discuss.,
https://doi.org/10.5194/gmd-2019-152-SC2, 2019
© Author(s) 2019. This work is distributed under
the Creative Commons Attribution 4.0 License.

Geoscientific Model Development Discussions

Interactive comment on "JULES-GL7: The Global Land Configuration of the Joint UK Land Environment Simulation version 7.0" *by* Andrew J. Wiltshire e al.

Imtiaz Dharssi

i.dharssi@bom.gov.au

Received and published: 16 September 2019

1 Soil Parameters

P7L27: This sentence is not entirely accurate and better replaced by "The Jules-GL7 soil parameter values are based in part on soil parameter values developed for the MOSES model by Dharssi et al., (2009) and Cox et al., (1999)."

Dharssi et al (2009) is a Technical Report published by the UK Meteorological Office. The reference given in the discussion paper is unfortunately garbled. The correct reference is:

Dharssi, I., Vidale, P. L., Verhoef, A., Macpherson, B., Jones, C. and Best, M.: New soil physical properties implemented in the Unified Model at PS18, Meteorology Research and Development Technical Report 528, Met. Office, Exeter, UK, [online] Available from http://research.metoffice.gov.uk/research/nwp/publications/papers/technical_reports/reports/ (Accessed 16 Sep 2019), 2009.

Cox, P. M., R. A. Betts, C. B. Bunton, R. L. H. Essery, P. R. Rowntree, and J. Smith. "The impact of new land surface physics on the GCM simulation of climate and climate sensitivity." Climate Dynamics 15, no. 3 (1999): 183-203.

2 Section 2.1.1.1

P4L33 is potentially misleading "The ancillaries are derived from satellite data processed ...". The Canopy heights are derived using parameters h_i and $Lb_{i,j}$. Please can you clarify whether the PFT specific height scalar (h_i) and/or the balanced LAI ($Lb_{i,j}$) are derived from remote sensing data. The text references a non-existent Table B2, perhaps the correct reference is Table 6 or 7. Please can you clarify if Table 6 contains values for the balanced LAI and Table 7 contains values for the PFT specific height scalar. Spatial maps of Canopy height would allow the reader to more clearly judge the quality of the Jules Canopy heights and whether any remote sensing data has been used.

You might mention that GL9 uses remotely sensed tree heights and the work was in part influenced by
Dharssi, I., Steinle, P. and Fernon, J. 2015: Improved numerical weather predictions by using optimised urban model parameter values and satellite derived tree heights. 21st International Congress on Modelling and Simulation, Gold Coast, Aus-

tralia. https://www.mssanz.org.au/modsim2015/M4/dharssi.pdf

3 Table 3

The entry "b: exponent in soil hydraulic characteristics" should be replaced by "b: van Genuchten soil hydraulic parameter 1/(n-1)".

Interactive comment on Geosci. Model Dev. Discuss., https://doi.org/10.5194/gmd-2019-152, 2019.