

Interactive comment on “ERA-Interim/Land: a global land water resources dataset” by G. Balsamo et al.

Anonymous Referee #2

Received and published: 6 January 2014

General comments:

A new global land reanalysis called ERA-Interim/Land is presented and validated using in situ observations at many sites and (for surface albedo) satellite data. The added value vs. the original ERA-Interim land variables is shown. This new dataset is freely available on the web and could have multiple applications in hydrology. This paper deserves to be published but some editorial improvements need to be made before a possible publication in HESS.

Recommendation: Minor revisions.

Particular comments:

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P. 14712 (top): As far as I know, the French SMOSMANIA network has 21 stations. Why using 12 stations only ?

P. 14712 (Sect. 2.1.6): The MODIS surface albedo is used for verification but nothing is said about the albedo calculation in the model. What are the drivers of the snow-free albedo in the model ? I assume that in the real world, the seasonal and interannual variability of LAI and vegetation coverage are the main drivers of the snow-free albedo together with (probably) soil moisture.

P. 14714 (Sect. 2.2.3): What about the interannual variability of LAI ?

P. 14715 (end of Sect. 2.2): While river discharge data are used to validate the model simulations, nothing is said about the river discharge calculation in the model.

P. 14717, L. 13 (Fig. 6): Using the cc at a monthly time scale is not very demanding. Why not using the Nash skill score ?

P. 14718, L. 4: An average global volumetric soil moisture is given. It is unclear which quantity is represented, e.g. at which soil depth. Is the 0.23-0.24 m³m⁻³ value a key scientific result or a mere technical artefact ? I tend to think that this is not a scientific result and this value should be removed.

P. 14719 (Fig. 10): From this Taylor diagram, I am not able to see any improvement related to the new dataset. If there is really an improvement, please use an appropriate method (clearer than a Taylor diagram) to show it.

P. 14721, L. 14: What about the interannual variability of LAI ?

Editorial comments:

P. 14706 (abstract): The spatial resolution of the dataset should be mentioned here.

P. 14721 (bottom): The works cited in this paragraph (Balsamo et al. 2007, Mahfouf et al. 2008, Drusch et al. 2012, Reichle et al. 2013) are missing in the reference list.

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P. 14733 (Table 3, last column): "E" is undefined.

P. 14736 (Fig. 3): Little or no interannual variability can be seen, please adapt the color scale. The X-title is unreadable/unclear.

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