

Interactive comment on “Filling the gaps in meteorological continuous data measured at FLUXNET sites with ERA-interim reanalysis” by N. Vuichard and D. Papale

Anonymous Referee #2

Received and published: 19 May 2015

General comments:

The ERA-Interim atmospheric time series over Fluxnet sites are bias corrected in order to gap-fill the locally observed meteorological variables. This is a prerequisite to the use of the flux observations to benchmark land surface models as the latter need continuous atmospheric time series. The methods are presented and a web link is given where the gap-filled data can be downloaded.

The paper is reasonably well written but copy editing is needed.

In the end, what really matters is the quality of the simulated fluxes at Fluxnet sites.

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An assessment of the impact on simulated fluxes of using ERA-Interim (instead of local atmospheric observations) to force a land surface model would be instructive. I think that the supplement of Balzarolo et al. (2014) should be cited, at least, as it addresses this issue: <http://www.biogeosciences.net/11/2661/2014/bg-11-2661-2014-supplement.pdf>

This document shows that using raw ERA-Interim data instead of local atmospheric observations has little impact (or a positive impact) on the scores of the simulations of a land surface model with respect to local observations of CO₂ fluxes. It must be noted that ERA-Interim precipitation is not reliable in tropical areas (Balsamo et al. HESS (19, 389-407) 2015). Any tropical site in Table 1 ?

Recommendation: publish after minor corrections.

Particular comments:

- P. 24, L. 16 and L. 21: "overall" or "over all" ?
- P. 29, L. 20: "overall" or "over all" ?
- P. 29, L. 11 and L. 25 ("It is assumed"): It should not be an assumption, it should be a solid attribute of the data. Any reason to think that this is not the case ?
- P. 32, L. 20 ("rescaled"): do you mean "interpolated" ?
- P. 36, L. 12: "can not" or "cannot" ?
- P. 39, L. 6 and L. 13: "overall" or "over all" ?

Interactive comment on Earth Syst. Sci. Data Discuss., 8, 23, 2015.

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