

Interactive comment on “Effects of drought – altered seasonality and low rainfall – in net ecosystem carbon exchange of three contrasting Mediterranean ecosystems” by J. S. Pereira et al.

Anonymous Referee #2

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General Comments

I would really like to see some “robust” evidence of the quality of the measurements, either spectra, or energy balance closure, or both. Without those, one can apply all sorts of corrections, but still generate “bad” data. Can the authors provide at least some statements on this?

The authors call the ecosystems sites sometimes by the geographical site name and others by the vegetation type. This sometimes causes some confusion because the reader. I would recommend to choose one or the other, but use it consistently throughout.

Data processing and quality control, gap filling and flux partitioning appears to be done properly. However, the high percentage of gap filling was surprising. Can the authors estimate the potential effect on the analysis and/or conclusions?

The authors have chosen to analyze LAD, LUE and RUE. However, they do not explain properly why were the reasons for this selection, why not others? LAD, RUE and LUE are furthermore correlated. The authors should try to give a general overview of possible drought avoidance strategies and mechanism of the different species and then rewrite the paper according to thee lines. It now very much reads like, OK we have measurements, let us use some “off the shelf” indicators, apply those and write it up. I believe the paper could make a much better contribution if it was reorganised along the lines suggested above.

Conclusions are very short. Some more discussion is clearly needed.

Minor comments.

I believe the correct phrase is “hydrological year” not “water year”

LUE is a function of LAI and this last is a function of soil moisture and root depth basically but other factors also affect their functioning like: diffuse/direct radiation, specificity of rubisco. Can the authors attribute results to all these different aspects?

The dimensions of LUE are in $\text{mmolCO}_2/\text{PAR mol}$ which is affected directly by LAI and LAD. Why was LUE taken in $\text{mmolCO}_2/\text{Chlorophyll mol}$? Would thse dimensions not tell us more about the real strategies of the species in adapting to such conditions?

RUE: it is not clear how this is measured.

Interactive comment on Biogeosciences Discuss., 4, 1703, 2007.

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