

Interactive comment on “Recovery of GPP monthly pattern in a eucalypt site in Portugal after felling” by A. Rodrigues and G. Pita

Anonymous Referee #2

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"Recovery of GPP monthly pattern in a eucalypt site in Portugal after felling", by A. Rodrigues and G. Pita

This paper presents eddy covariance measurements of CO₂ exchange in a managed eucalypt plantation for pulp production, and aims to discuss the role of drought and management (felling) on the CO₂ exchange. The largest part of the measurements presented in this paper (all years except 2010) have been published recently in Agricultural and Forest Meteorology (Rodrigues et al., 2011, AFM, 151, p. 493-507), and the study presented here does not add much to the analysis that was published previously. Moreover, I have some major remarks with regard to the analysis and the structure that would need attention (see below). Therefore I cannot recommend this paper for publication in Biogeosciences in its current form.

C1842

Major remarks

- Throughout the manuscript, units need attention. Most fluxes are given in g cm⁻², but the numbers indicated are more likely g m⁻². In contrast to that, Fig. 3 and 4 present the results in μmol CO₂ m⁻² s⁻¹.

- The paper presents results from the measurement, but does hardly provide in-depth analysis and explanations for them, nor does it present new parts beyond the mentioned Rodrigues et al. (AFM, 2011) paper. The analysis of "carbon sink patterns on daily, seasonal and annual timescales", as mentioned as an objective, is very superficial. The most interesting differences for the paper, e.g. between years 2004 (drought), 2005 (drought) and 2006 (felling), are averaged into one set in Fig. 3. and missing from Fig. 4.

- The structure of the paper would need more attention. In the abstract, details about the stand that are not relevant at this stage are listed, whereas the summary of the results could be more descriptive. The introduction is used to present results (p. 4002, l. 2-7). A discussion of the results is missing: neither the Results section, nor the Conclusions section discuss the outcome of the study in relation to sources of uncertainty, or compare the results to other studies.

- It would be interesting to see a comparison between an (estimated) NEE for a full production cycle, and the mass of carbon that is removed in felling (2006) + thinning(s) (2008). Of course you do not cover the whole period with the measurements, but the results represent both the start of a cycle after felling (after 2006) and the production shortly before (2002-2006).

Minor remarks

- Introduce abbreviations that you use (NEE, GPP, TER) at the first occasion of use.

- Adjust the number of digits used (e.g. in the abstract, or in Table 1) to the precision of the measurements.

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- p. 4001, l. 7: Check "0.205 PgC/ano 0135,"
- p. 4003, l. 11: This line is unclear. Do you mean that the measurements were performed continuously in two-hour intervals since January 2007?
- p. 4004, l. 6: What is meant with a "steady" variation?
- p. 4004, l. 16: Tables or figures are more suited to present a series of numbers than text. Please use the text to highlight the difference, e.g. between 2002-2004 and 2005-2006.
- p. 4004, l. 25: VPD deficit
- p. 4006, l. 10: Why "too sensitive"?

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