

## ***Interactive comment on “Tree height integrated into pan-tropical forest biomass estimates” by T. R. Feldpausch et al.***

**P. Stoy (Editor)**

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Both reviewers agree with my assessment that this manuscript is publishable in Biogeosciences after minor revisions. At the same time, regarding the response letter, more attention to valuable comments by Reviewer #2 is warranted to avoid sending the manuscript back for review.

The authors are correct in stating that  $H$  can be measured accurately in the field. My lab and I just did so last week, and I'd like to think that these measurements are accurate to within a few cm. At the same time, all measurements have some uncertainty. The question is what degree of uncertainty is permissible? Please be more explicit in stating representative values of uncertainty in  $H$ , which I find usually come from measurement in complex topography and/or the ability to find the canopy top in complex canopies,

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especially evergreen deciduous canopies such as tropical forests.

With regard to the response to point 2 (and points 4 and 5) by Reviewer #2, 'impossible' is the wrong word here. A major goal of remote sensing efforts to measure forest biomass is to not have to measure every plot. With regards to the response to point 5, I can list some ways in which emergent tree height can be overestimated. This is not impossible.

With regards to the response to points 6 and 7, I agree with the reviewer. If the paper deals with reducing uncertainty, at a minimum some uncertainty estimates in the pan-tropical biomass values needs to be included. Given the plot locations in Figure 1 and scaling challenges, this is probably a task better left to subsequent manuscripts. In my view, Figure 1 does not overstep any scaling boundaries, but a few of the subregions strike me as arbitrary. Fig. 1 has far too many significant digits. Table 5 and section 3.3 should be excluded here and expanded upon elsewhere with more rigorous uncertainty estimation.

Along these lines, please note that point 15 by Reviewer #2. If the authors wish to adjust global tropical biomass numbers, it is better to do this rigorously with appropriate error accounting elsewhere than it is to tag numbers on to the present paper. Much is made of the 13% estimated reduction in biomass. But is this 13 +/- 10% or 13 +/- 1%? The paper does not make a substantial effort to integrate belowground biomass information (does section 2.3 include roots?). Uncertainties in wood density will introduce more error, as will uncertainties in both remote sensing and field observations. These uncertainties and others need to be examined thoroughly and interpreted cautiously for regional biomass estimates. The manuscript would be strengthened by excluding speculative sections.

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Interactive comment on Biogeosciences Discuss., 9, 2567, 2012.

**BGD**

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