

## ***Interactive comment on “Estimation of Coarse Woody Debris Stocks in Intact and Degraded Forests in the Brazilian Amazon Using Airborne Lidar” by Marcos A. S. Scaranello et al.***

### **Anonymous Referee #1**

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The manuscript by Scaranello et al. deals with a new approach to quantify the CWD in tropical forests. The approach is based on Airborne LiDAR and it may be applied to other forests as well, at least I see no reason why this should not be possible. Based on a return density of at least 13 returns per m<sup>2</sup> more than 14,000 ha of Brazilian forest were scanned. Ground-truth was obtained by forest inventory. Additionally, LandSat Imagery was used to include disturbance history as an additional explanatory variable.

The overall quality of the discussion paper is, to my impression, good. I appreciate the concise way of writing and the nicely structured style (well chosen paragraphs). All chapters are in good balance; language is mostly very good and as far as I can tell

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references are provided in an appropriate manner and number. To me this is a solid work.

I would have enjoyed to see a more hypothesis-based pre-selection of LiDAR metrics that should be related to CWD, rather than an exploratory analysis of all tested metrics. The authors may at least explain, why they chose the presented metrics out of the myriad of metrics available from LiDAR.

Individual scientific questions/issues: To me, the RMSE are always fairly high. 51.6% (p.10 l.26) is a lot, even though the authors show that earlier models performed weaker even in boreal forest (78.8%). I therefore appreciate that the authors stated that their work may help “reducing uncertainty”, rather than selling it as a highly accurate tool.

A few purely technical suggestions:

p.3 l.10: shouldn't it be “losses in aboveground” instead “of”? p.3 l.11: Shouldn't it be “at the forest floor” not “in”? p.6. 9 and 10: Would be nice to refer to Table 1 again, so the reader knows where to find the different metrics p.8 l.3: It becomes obvious what the referee criticized: “CWD (including fallen and standing dead wood”. I agree the terminology may be revised as suggest by the other referee. p.8 l.14: coarse woody debris with “y” p.8 l.27: “site-related”

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C2