

Interactive comment on “Mapping tropical forest biomass with radar and spaceborne LiDAR: overcoming problems of high biomass and persistent cloud” by E. T. A. Mitchard et al.

K. Tansey

kjt7@le.ac.uk

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Dear authors, The paper is from a well-respected team with a wide range of competencies and skills. I have the following comments:

1. The paper makes a number of references to REDD+. I believe that the focus of the paper should be on the science and not on supporting science policy. I am not aware of any large scale REDD+ projects that would be happy with a biomass map at the 1 hectare resolution. We need to be careful not to oversell. I understand most REDD+ projects are small scale and would be ideal for an airborne lidar (not particularly expensive in the context) and multispectral instrument. Rather the paper should lay out

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the needs for improved measurements and look forward to future missions.

2. There is a heavy reliance of Chave's work. I call upon the team to look into developing a database of information that can help people who use radar to derive their biomass. The team contains field scientists. Let's get some more regional information.

3. The methodology is complex. In the context of repeatability and transparency I would find it difficult to follow your work. I suggest that you produce a flow chart as a figure to help the reader to understand the work flow of radar, lidar and field data.

4. You touch upon the co-location errors between the LiDAR footprint and the ground data. I understand that this error could be several hundred metres. Luckily your biomass seems to be homogenous across the study area so that this should not be significant. In a heterogeneous canopy, I would have no confidence in the retrieval (bad for REDD+).

5. In the introduction, can you specify some clear aims and objectives? Revisit in the discussion.

6. In section 4.5.1, what is the reason for selection of 6 thematic classes? Why an interval of 25? Did you test others?

7. In section 5. on error estimation, you again talk about REDD+. We do not want people thinking about REDD+ that form the opinion that radar+lidar is error prone and the uncertainties are too large. This is the message they will get. If we have limited field data and inherent inaccuracies (bias) leading to major uncertainties, we should not be placing this within a REDD context. This is R&D. How will next generation sensors tackle the systematic and random errors (more important to write about).

8. As for point 7 for the conclusion.

I hope these comments help. Good luck with the paper and the work.

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