This paper is now more carefully written and is a very useful addition to the literature about the accuracy with which we can learn about landscape scale biomass, especially from remote sensing, using information gathered at sample plots.

The initial remarks in my first review still hold good, and I repeat them: This paper poses and attempts to answer several important questions that are significant in the context of current efforts to infer large scale biomass maps from remote sensing and to make more general inferences on landscape scale biomass from a set of sample plots. **In fact, the paper is not really about remote sensing per se, but about how accurately one can extrapolate measurements at one scale to a larger scale.** In general, it illustrates that the sampling error when small plots are used to represent the average biomass of a larger area can lead to significant errors in the regression relation between the two. This is of special importance when training remote sensing data with plots that are significantly smaller than the resolution of the instrument.

The authors have adequately addressed the points I made in my first review, but there are still some matters and careless use of language that need addressing before publication, as set out below.

129; deforestation should surely also be mentioned

131 REDD+ was set up later than 2008, so this ref is not right

138 delete “still”

139 remove “to” before stratify

140: stratum

141-146: for landscape scale fluxes, if the forest is stratified and we mean the mean right for each stratum, we’ll end up with the right overall mean biomass or flux. Also, what has forest classification got to do with degradation or regrowth: these are different things? What is meant buy “insensitive”?

146: what is meant by a continuous measure? Isn’t carbon density always continuous?

152: “mission”; particular

155 & 300: the intrinsic resolution of BIOMASS is around 50-60 m; the scale at which it will map biomass is ~200 m

167: remove potential

168: often not ellipsoidal; radar is nearly square

170 slant range correction is always applied to radar products as part of the pre-processing for applications such as forestry, so this comment is wrong

175: remove potential

179; what is meant by a large footprint; perhaps delete this?

182 what is a “standard” plot size?

181-184; isn't (1) the same as (2)?

186: remove the comma

190: what is meant by "standardized"? Is it necessary to say this, since below it says what was actually done?

201-207: I agree with the other reviewer; I see no reason to talk about topographic variability when what is actually used is elevation range. These are two different things and it is misleading to conflate them. It is not surprising that elevation changes can affect biomass, and this seems the more interesting variable. This affects several parts of text, including, e.g, the caption for Fig. 3, Fig.5, section round 348, 355, etc.

204: delete publicly

218-220; relative to what? This is not really correct as written. The CV may be large but the sampling error may be small (all to do with that word relative)

226: rm "qualitatively with", and put "graphically"

229-234: rm "in the … autocorrelation" and re-order, to put the equation for CV(s) first, before the descriptive text (which may not be needed). They may be true, but where is the justification for the statements about the effects of correlation? The paper lacks is a clear quantitative relation between correlation and variance, and this weakens several parts of the paper, e.g 436-440

244 remove "a class"

247 rm "more usefully"

251: rm "The"

260, 264, 374 (maybe elsewhere): what does "complete .. randomness" mean? Independent, independent identically distributed?

267 why "repeated"

275, 276: I think it should be pointed out here that this is NOT just a statement about remote sensing data but any attempt to extrapolate sample measurements to a larger scale. In fact, given the idealised assumptions about perfect EO measurements, it is quite unrealistic. This relates to 293; it's not the measured AGBD but the exact AGBD.

304 , rm "regression"

343 What does "local" refer to?

348: why italic rho?

349; what does considerable mean? quantify this.

357-366: How do the authors square what is said in the text about low measured autocorrelations, e.g. in Section 3.2? There is a contradiction here that needs explaining.

362 gentler -> smaller

364-366: what is the justification for this statement?

377: “might explain”; how does it do this?

378: “gap of variability” means what?

384: rm comma

390; rm “(…error)”

395: I think the jargon phrase “dilution bias” should be removed everywhere from the paper. A clear example of why it is jargon is that the authors need to explain what it means at 395: it is slope estimation, so why not just use this simpler, easily understood phrase?

4 Discussion: large parts of the discussion just repeat what is above without adding new insight or information and I think it should be considerably shortened (by about 50%).

424 -428: this relates to a remark made above. The authors are confusing elevation change (which can clearly have an inpact on biomass) with variability, where the connection is less obvious.

436 et seq: this repeats what was said above without resolving the contradiction. Does significant in 439 mean statistically significant? If it is statistically significant but small how does this translate into AGBD

440: what is spatial aggregation? How does topography “explain” this aggregation

444 rm larger

445: what is wavelet coherence?

449: this is another example of where lack of any theory renders the txt obscure; what is actually meant by “more uniformity than expected”? And shouldn’t this, if it exists, be visible in autocorrelation?

475: In general is wrong; as noted, radar does not obey this

477: this is a very dubious statement, since it contradicts on the sampling theorem from signal processing: an adequately sampled signal will not lose information by this geometric conversion (note that sampling is here used in a signal processing sense)

481 differences

492 Saatchi’s map is not global

513: rm careful: nothing in this paper discusses spatial structure as far as I could see.

532: I think the correct variable is altitude – how do you stratify by topography?

547 rm “approach”

577: products -> estimates of biomass density

582: “- plots” -> “that are”

Figures: Many of the captions should be shortened to simply explain what the figure or plot actually represents. Several of them contain too much detail about methods and/or text that discusses the figure and is better placed in the main text; e.g. Fig 3.

Fig 4 is not a plot of spatial autocorrelation, or of AGBD. A subplot has a size, not a resolution.

Fig 5;”topo hetero” means nothing and should be removed

Fig.6 what does the colour bar refer to; are colours necessary?