Bg_2015-358 version 5

Introduction:

Line 93: The following sentence might be removed : "Findings associated to WAI impacts were significant since this structural variable when associated to Leaf Area Index (LAI), is used to defined the concept of Plant Area Index (PAI = LAI + WAI)." I don't understand what relevant information it brings.

Line 121: If I well understand, according to the organisation of the result section, it appears to me that you first assess the changes of forest structure du to liana presence and forest succession. Then you assess the potential of VEGNET and HPs to detect the vertical structure of forest stands at different successional stages. And third you reported how liana abundance could affect the prediction the level of succession of a given forest stand from VEGNET and HPs.
It might be clearer to state it like that in the introduction.

Material and methods:

Line 195: consider rephrasing : "Lianas in early forests tend to be more present during the transition from early to intermediate stages" in something like "Lianas abundance tends to increase in early forests during their transition to intermediate stages".

Line 198 "with" seems to be missing.

Line 211: The sentence "In each of these plots we extracted the available information that described the complexity of the dry forest according to its structure" is unclear. Do you mean you extracted all the information available describing structural complexity of the forest? Why using the word complexity, how do you define it? I would remove it.

Line 250 : Do Cx, Cy and RG relate to the PAVD or to the PAI distribution along height, or both ? Or didn't I understand what they are related to. If so I suggest a small piece of explanation in the text.

Line 329-330: The link between LAI and canopy openness (see my comment about Table 2) wouldn't lead me to consider both variable in the CCA.

Line 367: a coma is missing after "MANOVA"

Line 425 "[…], but can discriminate with different liana abundance where lower values of correlation are associated with HL plots" should be replace by something like "[…], but can discriminate between different liana abundance since lower values of correlation are associated with HL plots"

Line 449: typo, "they" might be "the"

Line 452 & 453: "shubrs " and "shurbs" are probably "shrubs"

Line 453: "High distribution" might means "high density at low height" isn't it?

Line 454: make**s**

Table 2

I still have a problem with the relation between PAI and canopy opennes.

PAI(z) = -1.1 × ln(Pgap(z)) from VEGENET. On the ground isn't *Pgap* equal to canopy openness? I know it would be a canopy openness measured from TLS while in your study LAI and canopy openness come from hemispherical photography. Why canopy openness from gap light analyzer wouldn't take into account woody part of the vegetation?

If I well understood, there is no distinction between leaves and wood in the Gap Light Analyzer? The effective LAI is computed following (Stenberg et al. 1994). Those author estimate indeed LAI but in scots pine stands. We don't know if the LAI/WAI respective proportions are the same in scots pine stands and dry tropical forest, then LAI estimation might not be very trustable. Moreover with this way of calculation it is not posilbe to take into account the potential modification of leaf/wood ratio according to liana abundance or forest succession.

By the way, if you compare PAI values obtained from VEGENET to LAI values from HP you see that they overlap in every forest categories you have.

I then think the difference in LAI you find between HL and LL should be interpreted (together with canopy openness difference) as PAI differences sensed by HP but no by VEGENET. In the discussion on the ability for VEGENET to accurately measure forest structure characteristics should maybe take into account this fact (I wouldn't necessarily conclude that VEGENET is worse than HP).

Figure 2:

I don't understand the p=0.01 and p=0.16 in the panels c and d. What do they stand for?

Figure 3:

I think you should replace "the ratio of liana basal area (L) to total basal area (TBA)" by "the ratio of liana basal area to total basal area (L/TBA)". More generally pay attention to use always the same notation.