Thank you for your time and valuable comments.
Please find our replies below each comment. They are displayed in blue. Line numbers in the replies refer to the revised manuscript with tracked changes. Line numbers in the reviewer comments refer to the first manuscript version.

Kind regards,
Anika Gebauer

The objective of the study is to develop pedotransfer function for water contents at four pressure heads (PF 0, PF 0.5, PF 1.5, PF 2.5) for two tropical mountain regions with high soil organic carbon content. Boosted regression tree technique was used to fit the models for both areas considering two tuning procedures to determine the regression tree-model parameters (n.tree, shrinkage, interation depth, bag fraction): grid search and differential evolution, the latter showing better results on the water retention estimates for the both areas. The work also compared the performance of the proposed PTFs with other PTFs from literature confirming the better performance of the proposed models. I congratulate the authors for the effort in collecting physico-chemical and hydrological data in such atypical soils and for using innovative techniques, such as the differential evolution, in order to get better results on the models fits. I also congratulate them for developing PTFs for organic soils which are not so common in the literature. The work in well written and structured and the subject is well posed. Some general and specific comments are summarized below:

a) Line 45: In organic Finnland soils?
Yes, in Finish peat soils. The sentence in line 47 was adapted.

b) It was not clear in the text why you have chosen the boosted regression tree models (Lines 72-73);
The reasons for using boosted regression tree models were added to lines 82 ff..

c) The sentence in line 97-98 should be reformulated ("It allows representing a research…to the accessible area"). The way it was written was unclear to me.
The description of the sampling site selection algorithm was extended (lines 112 ff.)

d) Line 105. Sometimes outliers should carry important information from the studied area. You should detail the reason of removing them.
The sentences in lines 131 ff. were adapted and extended to explain why it was decided to remove outliers.

e) The description of the boosted regression tree should be improved by describing clearer its fitting procedure (Lines 110-115).
The BRT fitting procedure was described more detailed (lines 149 ff.)

f) Line 144: What the word "respectively" is related to?
The sentence in lines 177 f. was adapted.

g) Line 182: After explaining the reasons for excluding the outliers it would be interesting to inform the range of their values for each soil property;
As only data pairs of response and predictor variables that were identified as multivariate outliers were removed (lines 132 f.), it is not useful to inform about the range for each soil property. The complete dataset, including data pairs identified as multivariate outliers, will be available upon acceptance (please see comment r).

h) Lines 182-190: What is right and left- skewed distribution? It is not clear.
The terms "right- and left- skew" were changed to the more common terms "negative- and positive-skew" (Section 3.1). Negative skew: the mean is smaller than the median. Positive skew: the median is smaller than the mean.

i) Line 199: I suggest to correct this sentence: "..organic matter being characterized by a high water holding capacity" to *organic matter which is associated with soils with a high water holding capacity*

The sentence was corrected (lines 255 ff.).

j) Line 218: How the scaled water retention value was defined? This needs to be clarified;

Water retention values were scaled to the range [0, 1] using Eq. 1 (added to lines 135 ff.).

k) Line 230: Change Fig.11 and 12 to Fig 8 and 9;

Fig.11 and 12 were changed to Fig. 8 and 9 (lines 299 f.).

l) Line 240: Change Section 3.2 to Section 3.3;

Section 3.2 was changed to Section 3.3 (line 309).

m) Line 245: "PSD measurements were not included..in this area". This sentence should go to Section 3.1 when you call Fig.4 in the text.

The sentence in lines 315 f. was deleted. Following the comments of the anonymous referee #1 , it was explained why PSD measurements were not possible for Quinuas (section 2.2, lines 129 f.). The caption of Fig. 4 was adapted.

n) Line 234: Change Fig.9 a-d and 10 a-d to Fig.8 a-d to Fig.9 a-d;

Fig.9 and 10 were changed to Fig. 8 and 9 (line 292).

o) Lines 253-263: Did you apply the PTFs from the literature to the Laipura soils considering their range values applicability?
The test Laipura soils were included in the calibration of the proposed PTFs (BRT PTF – Table 2)? This need to be clarified.

Reliable PTFs, that were developed under conditions as similar as possible to the Laipuna dataset were selected (lines 222 f.). Selected PTFs are more general (line 16) as they were developed on larger datasets. The number of response – predictor variable data pairs was added to Table 2. However, the selected PTFs were not specifically developed for soils of Ecuadorian dry forest ecosystems and therefore response and predictors variable do not always match concerning their range.
The same test sets were used to evaluate the performance of the BRT PTFs and the existing PTFs. Using cross validation each sample was used for testing (please see Section 2.5).

p) Avoid vague sentences: ex: "these values are.."(Line 268), "in this case"(Line 320), "this might.." (line 320), "This might also result" (lines 325-326);

The sentences in lines 422-435 were adapted.

q) The code of the proposed models should be presented;

The developed PTFs, as well as the underlying datasets, will be uploaded to the Open Science Framework (OSF) upon acceptance (added to lines 368 ff.).

r) Is it possible to provide the study database to the readers?

Please see comment q.