Comment to revised manuscript

I am grateful to the authors for the great effort in reviewing and editing the manuscript. Its scientific correctness and significancy improved and I appreciate the effort conducted after the first round of reviews. I have several minor and technical comments that could enhance further the message and presentation of the manuscript; I would recommend after these, the manuscript could be accepted for publication. Comments refer to line numbers in the tracked-changes document the authors uploaded after the 1st round of reviews.

Minor and technical comments

1.- The main concern I have relates to clarity regarding the presentation of the story. Although no major changes are needed, regarding organization of sections or figures (except for some small comments that are detailed in what follows), I would recommend revising again the text. Try to reduce sentences and write them in a more reader-friendly style. Particularly, this would be beneficial for the discussion section.

2.- Title: although I suggested the change in the title, it could be further refined by "Building a random forest machine learning model for annual net ecosystem exchange estimation in agricultural fields using discontinuous atmospheric Eddy Covariance measurements".

3.- Line 18: to estimate the annual net ecosystem exchange (NEE)

4.- Line 27: estimated from the sector-specific models indicated

5.- Line 54: A suggestion: Change to "However, their overall role as a carbon sink or source depends largely also on agricultural management practices".

6.- Line 69: Change "net carbon budget" to "net ecosystem carbon exchange" as suggested previously, as I think you don't specifically refer here to carbon budget.

7.- Lines 73 and 179: Although I might contradict what other referee suggested, the word "atmospheric" is not necessary here.

8.- Line 83: Baldocchi 2020 did not explicitly state that EC networks span the main climate and ecological regions; it said that the addition of new towers did not alter significantly the statistics of fluxes despite including new regions. This does not mean that there is no bias in the global networks and global responses of fluxes, as there are many regions (for instance subtropical, dry regions, or mountainous forests) that are not well represented in continental or global networks and it could happen that many new towers are covering relatively similar biomes compared to the existing ones.

9.- Lines 181-183: frequency, which occur in the surface boundary layer. The EC method

10.- Line 207: You could remove "we nove use since several years" as that is not itself a justification; the justification is adequately provided later on.

11.- Line 209: Maybe you could write "To justify the 10-min averaging period instead of the usual 30, comparisons were done between ..."

12.- Please check throughout all text that 10 min is written without a "." after min. min is already the unit and does not need a dot denoting abbreviation.

13.- Line 217: included

14.- In line with a comment from previous round, Lines 239 and 242: detrending is based on the linear method; please avoid double writing the same. Also, generally for this section, as the averaging period was written above, it is not necessary to state several times that the 10-min was used (e.g. in line 244). Instead, you could write "the averaging period".

15.- Line 244: contained

16.- Please refer to my minor comment number 6 in the previous round; the section describing the filters that were applied to processed data still remains unclear, so I would encourage to re-organize it for clarity.

17.- Line 270, figure 3: Please increase labels and legend size of the figure

18.- Line 282: remove ',' after identify.

19.- Line 395: You could write "with the number of 10-min observations" and remove "recorded each 10 minutes".

20.- Line 420: in this paragraph, state first what was done for the RF model, then say that the VSURF was not applied. It is generally better to start from the methods or strategies that were applied, instead of what was not.

21.- Line 443: For this paragraph - what is the importance of the wind direction in predictions? If it is high, then choosing a random wind direction within the sector's angular range could be misleading.

22.- Line 477: The number of trees was fixed at 300.

23.- Line 478: Is mtry the absolute value of the squared root of p? Please rewrite the equation's characters for clarity. Also, if p=8, is mtry 2 because it is rounded to the lowest, close integer number?

24.- Line 489: within the 300 trees

25.- Line 544: Site conditions, measured NEE dynamics and …

26.- Line 545: You could remove the first sentence, as it is clear you will show the data you measured over the period previously explained in methods.

27.- Line 547: with the studied site

28.- Line 552: harvest interventions / harvest events

29.- Line 557: remove "consistent"

30.- Line 559: Maybe it is not necessary to show the data prior to full filtering; this could be confusing for the later results. Besides, you already showed filter effect in Methods.

31.- Line 579: Please check if "MODIS" products need a citation.

32.- Line 610: "Nevertheless, the global model…"

33.- Line 653: built from 100 resampled RF models

34.- Figure 8 would benefit from adding the points on top of the boxplots as scatters, to better visualize the distributions. Also, the text is very small, please increase its size.

35.- Line 671: Please avoid repetition of methods; just jump directly to what we can see in the figure/table. The same applies to captions of Table 3 and Figure 9.

36.- Line 709: This paragraph could be removed, as it is clear that in the next section you will discuss your results.

37.- Line 714: is required for a heterogeneous, single EC-tower site?

38.- Generally, the first part of discussion is difficult to read. Please try to be concise and go straight to the major discussion points.

39.- Line 781: as commented previously, please avoid writing "Kowalski-partitioned" or in general, mentioning methods that were already explain in the corresponding section.

40.- Line 803: in this paragraph and throughout discussion, please avoid writing results. If they were written before in section 3, remove them; otherwise, if these numbers are important, write them in the results section.

41.- Line 1032: remove "," after sampling density

42.- Line 1151: the single-tower approach is typically not considered cost-effective, in the sense that conventional EC is costly. It is right that the approach saves money in comparison to several conventional EC systems, but I would suggest to remove this term here.

43.- Table B1: Please unify letter size across the table.