Answers to comments of Reviewer 2

№	Comment	Answer
1	Parameter selection and parametrization is a central issue in the paper, but information about the parameters is mainly lacking. The cited literature for GBR90 (Vorobewskii et al. 2020) and for EXTR (Luong et al. 2020) list various sources for parameter groups without stating parameter values, too. Please include a table with the relevant parameters and their values which differ due to different soil and landcover input.	Agreed, the list of the parameters as well as their ranges (different from the default model ones) for each framework will be listed in extra Appendix.
2	The final values of the calibrated parameters and for comparison, the parameter values for the other model set-ups are lacking.	Agreed, Appendix C will be extended.
3	The concept of uncertainties in the paper is not clear. The reader would expect as a result confidence limits for the parameters and model outcome, which is not given. The authors should make clearer what they intent.	Agreed, will be elaborated. The main intention of the study was not to make a detailed assessment of the model's parameters and forcing uncertainty. Rather we want to address the topic mentioned in the main title. Namely, how available parameterization schemes, meteo input, and their scales influence BROOK90 performance regarding evaporation simulations. Thus, we suggest to rephrase/omit 'uncertainty' term confusement or use it with caution, pointing out that we did not present a quantitative 'meteo and parameter uncertainty' evaluation and elaborate the last two paragraphs in the intro.
4	In the discussion section main parts of the results, e.g., parametrization, are not discussed and new results are presented instead. The discussion nearly comes out without referring results from other researchers; therefore, the authors do not give proper credit to related work.	Agreed, the discussion section will be reorganized and discussion of the initial results will be elaborated.
5	The abstract does not contain results and a final outcome of the paper	Agreed, will be elaborated.
6	Elaborating the introduction, work out a hypothesis and state it at the end of the introduction (and not within the method section)	Agreed, will be elaborated.
7	Reorganize Data & Methods. Why not using traditional Material & methods – section? I suggest lifting "2.1 Eddy-covariance measurements" in the hierarchy and to do not subsume it under "Data", it is a central issue of the paper. When you have a data section, all datasets should be mentioned there.	Agreed, will be elaborated. LC, soil and DEM datasets used for GBR90 and EXTRUSO parameterization will be described more in detail.
8	The content of the results section and discussion section is not clearly separated. In the results section results are discussed and, in the discussion, new results are presented. Put the results from the discussion in the results section, and if necessary, give a description in the methods section	Agreed partly. See comment 4.
9	Line 17: I suggest deleting "…and various goodness of fit criteria", because the reader can assume that you do this, when you validate something.	Agreed, will be removed.
10	Line 25: "…yields approximately 2/3 of the total precipitation" Please add a source for this statement.	Agreed, will be added.
11	Line 25 -26: "However, with the need of higher spatial and temporal resolution, evaporation exposes larger variability" The	Agreed, will be elaborated.

	context to the preceding lines is not clear to me. Please reword. I suggest adding some sentences to improve the readability.	
12	Line 34: “eddy-covariance lysimeter” to “eddy-covariance and lysimeter”?	Agreed, will be corrected.
13	Line 34: “Bowen ratio, gradient, experimental water balance watershed”, please be more specific.	Agreed, will be elaborated.
14	Line 36 - 37: “…a space of scale and time. This footprint…”, please check your wording. For the eddy flux community, the context is maybe clear, for other readers maybe not. I think some part of the explanation from line 118-119 should be stated here.	Agreed, will be rephrased.
15	Line 54: “and evaporation measurements themselves” Do you mean the uncertainty of evaporation measurements used for validation? Please change the wording.	Agreed, will be rephrased.
16	Line 68: “Data” - The section data does not contain information about many input datasets, which are quoted in “3.1. BROOK90 setups”.	Agreed. See comment 7.
17	Line 72 – 73: “The average temperature varies between -15 °C and +15 °C in summer month”, are you sure with -15 in summer month? Why could it be colder in summer than in winter?	Agreed, will be corrected.
18	Line 81: yarrow to common yarrow? I suggest using Latin names.	Agreed, will be added.
19	Line 87: Are some of the sites affected by groundwater? How did you solve that problem with Brook90?	According to measurements, the GW table for all sites is at least 3 m deep, thus we assume, that there is no significant GW influence of E. Unfortunately, Brook has simplified the GW module (1 order bucket) which does not allow the influence of GW on E (only as a reservoir for discharge delay).
20	Line 100 – 101: Do you have a citation for the carbon budget?	We could cite the original datasets published within ICOS, which contain the data behind the statement (https//doi.org/10.18160/YVR0-4898 https//doi.org/10.18160/2G60-ZHAK)
21	Line 172: “can be set easily (as location or slope)” I can´t imagine that it is easy to set values for 100 parameters. Or did you use in most cases the default parameters provided by Brook90? In that case, please note it.	In most of the cases, these are either default (or adjusted for Saxony, since Federer’s study sites, who developed BROOK90 were located in the US). Besides default parameters, and parameters which are valid for whole model site (like i.e. average duration of rain precipitation per month) we specified the following number of parameters for each HRU (related to topography, land cover and soils): 28 in GBR90, 28 in EXTRUSO and 38 in manual BR
22	Line 183-184: How did you represent forest floor vegetation in the model? Or does it not play a significant role in the three forests, in contradiction e.g., to Scots pine forests?	Unfortunately, Brook does not provide representation of undergrowth of forest floor vegetation. Will be added to model shortcomings. Yes, it does play a role. It could be somewhat significant only in Hetzdorf, since in Tharandt and Oberbaerenburg the undergrowth is very weak and forest floor is almost clear.
23	Line 192-193: Please specify sources for the datasets	Agreed, will be added.

24	Line 192: If I correctly understood the Amazon Web Service Terrain Tiles is a web service which chooses the best available DEM for a specific location. So please indicate which DEM was used for saxony.	Agreed, its SRTM30, will be added.
25	Line 199-200: Please specify a source for CORINE, BodenKarte50, Open Sensor Web. It is confusing: From 2.2 I expected that you use RaKliDa – Metdata, but here you state that you use Open Sensor Web. Please clarify.	Agreed, will be added. Originally Extruso used OpenSensor (point meteostation data), which data was used to produce gridded Raklida data. Will be clarified.
26	Line 205: Please specify a source for the DEM	Agreed, will be added.
27	Line 215 - 216: "Our main hypothesis is that the goodness of fit of the setups decreases from global to local scale (for both parameterization and forcing)." I would expect the opposite: that the goodness of fit would increase from global to local scale, because local measurements of evapotranspiration should fit better to local measured input data. Please give an explanation how you come to that hypothesis. Furthermore, I suggest stating your hypothesis at the end of the introduction.	Agreed, will be corrected. Both sentences will be moved to the end of the intro.
28	Line 226: I suggest deleting: "Since all the proposed metrics are well known, we omit formulas in main text and list them in"	Agreed, will be rephrased.
29	Line 236 – 241: Please give a table of the 20 Parameters with their final values. Please include in that table also the parameter values from the other model setups. I suggest including that table in the main body of the manuscript.	Agreed partly. See comment 1. Including the table in text will require too much space from our point of view and is not worth it.
30	Line 251: "Before discussing…", delete, because it is the results section.	Agreed, will be deleted.
31	Line 259: "which got worse …" I suggest to reword.	Agreed, will be rephrased.
32	Line 263-264: "It was relatively difficult to achieve good timing for the vegetation period even on a monthly scale" I don´t understand what you mean with "achieve"?	Agreed, will be rephrased.
33	Line 267 "good BIAS", change it to low bias?	Agreed, will be changed.
34	Line 281 "variance errors" Please use a consistent nomenclature for the statistics throughout the manuscript.	Agreed, will be checked and corrected.
35	Line 308 – 309 "not so well" "distinctly worse" I suggest describing the results without judgmental adjectives.	Agreed, will be rephrased.
36	Line 311-321: This paragraph contains many aspects of a discussion. I suggest to restrict the results section to a description of the results and discussing the results in the discussion section.	Agreed partly, this paragraph concludes this section of results without a discussion on their aspects.
37	Line 322-327: I´m not sure if estimating the uncertainties of KGE by "resampled time-series" contributes significantly to the manuscript. I think this aspect could be omitted, or make clear, why these results are important, at least discuss it in the discussion.	Agreed partly, resampling was conducted to show the possible performance spread due to general time-series shortage and occurrence of some extreme years (e.g. like wet 2003, 2012 or very dry 2018-2019). Will be elaborated in text.
38	Line 340: "bias and variability are, on the other side, overestimated" What does it mean?	We mean positive deviations from the optimal values (1). Will be rephrased.
39	Line 355 – 356: Please shift this information to the introduction or discussion.	Agreed, will be shifted in intro.
40	Line 389 – 402: this paragraph contains a lot of information which should be shifted to the results section.	Agreed partly. See comment 4.
41	Line 412: "solar elevation" to solar elevation angle?	Agreed, will be corrected.
42	Line 414 – 430: this paragraph contains a lot of information which should be shifted to the results section.	Agreed partly. See comment 4.
43	Line 419: "After obtaining a persistent positive BIAS in the forests" BIAS for which variable?	Agreed, will be rephrased. We are referring to evaporation.

44	Line 431: I´m sure that this is not the first paper which deals with uncertainties of eddy-flux measurements. Maybe some references will help to enhance this section.	Agreed, additional references will be added.
45	Shouldn't be citations within the text ordered by date?	Agreed, will be corrected according to HESS regulations.
46	Line 52: "Allen et al., 1998, p.56; Miralles et al., 2016, p.2" Check if this form of citation is correct.	Agreed, will be corrected.
47	Line 114: correct: "6.90C"	Agreed, will be corrected.
48	Line 166 & 189: check the citations.	Agreed, will be corrected.