Dear prof. Pegram,

Thank you very much for constructive comments to this version of the manuscript as well as to the initial submission. We apologize for not including all of your previous comments – this was not an intention but happened during substantial revision of our manuscript.

The reservations introduced in the review are mostly related to the clarity of the paper. The main points are stated in the review and the supplement contains several others. Following the comments, we suggest several text additions together with a complete revision of Figure 2. We hope that the proposed modifications will help readers to follow the point of the paper.

COMMENTS FROM THE REVIEW

Comment: "*Do you mean the medians of r(5,11) in the 2 periods when you give the values as precisely 0.90 and 0.73?"*

Reply: No, the values 0.90 and 0.73 are the sample correlations $r_{5,11}$ from the control and future period, respectively, calculated from the original data with outliers. We suggest changing the sentence as follows: "In the simulation of the model 2A, *the sample correlation* $r_{5,11}$ decreased from…"

Comment: "*Please mark the item with an arrow, as I have done - it was very difficult to find in the figure. Please explain what you have done in more detail in Figure 4's caption, noting my comment on Figure 2."*

Reply: We will add the arrow to Figure 4 and we will complete the Figure 4's caption accordingly. Together with this we suggest changing Figure 2 so that it depicts the numbering of *all* pairs of grid-boxes:

grid-box number	1	2	3	4	5	6	7	8	9	10	11	12
1												
2	1											
3	2	3										
4	4	5	6									
5	7	8	9	10								
6	11	12	13	14	15							
7	16	17	18	19	20	21						
8	22	23	24	25	26	27	28					
9	29	30	31	32	33	34	35	36				
10	37	38	39	40	41	42	43	44	45			
11	46	47	48	49	50	51	52	53	54	55		
12	56	57	58	59	60	61	62	63	64	65	66	

Figure 2. The numbering of individual pairs of grid-boxes. The figure depicts the correlation matrix, the orders of rows/columns correspond to the grid-box labels from Fig. 1. The sub-diagonal part of the (symmetrical) matrix was used for numbering of individual pairs of grid-boxes – the numbers inside of the matrix represent the identifiers used in Fig. 4.

Comment: "*To my understanding, row 5 of the correlation matrix in Figure 2 (extrapolated) goes from 1 to 4, not 1 to 11. If you are referring to the item which I've marked with an arrow in Figure 4, then in the caption you should note that the divisions inserted in the figure, as I previously requested, are for columns 2 to 12, not rows as in the caption! I wasted a lot of time trying to sort it out."*

Reply: The identifiers placed between two neighbouring blue lines in Fig. 4 are located in one row of the correlation matrix, or more precisely they are located in the sub-diagonal part of this row. To state this clearly, we suggest changing the caption of Figure 4 as follows:

Figure 4. The 95% confidence intervals of the cross-correlation for overlapping wet periods for all models. The identifiers of grid-box pairs (ID) are explained in Fig. 2. The blue lines separate identifiers located in successive rows in the correlation matrix (see Fig. 2). The arrow marks the confidence intervals around the $r_{5,\,11}$ (ID 50) of the model 2A, discussed in more detail in section 4.2.

We hope that this caption together with revised Figure 2 will prevent misunderstanding.

COMMENTS FROM THE SUPPLEMENT

We accept all comments related to grammar.

Line 87, comment: ***"I do not understand this sentence; please reword it"***
Reply: The sentence **"The joints of adjacent blocks were not included in the calculations"** is only a supplementary comment related to the calculation of serial correlation in the block bootstrap. Due to random selection of the blocks the beginning part of blocks is independent on the end of the previous blocks. To minimize bias introduced by block resampling, data that are potentially influenced were not considered for the calculation of the serial correlation. The sentence is unnecessary, we suggest it's removing.

Line 99, comment: ***"of the medians?"***
Reply: No, the interval $\langle -0.02, 0.03 \rangle$ represents the overall extent of changes of binary cross-correlations; see Fig. 3(a).

Line 108, comment: ***"Surely these values are 0.08 and 0.023?? see my estimates in Figures 3(b) and 3(c)"***
Reply: The values 0.8 and 0.23 are the *averages* of cross-correlation and lag-1 auto-correlation, respectively, calculated across all models. Figures 3(b) and 3(c) depict the *changes* of cross-correlation and lag-1 auto-correlation, respectively. The information about averages is related to the previous sentence and explains why the *relative changes* of cross-correlations are higher than in the case of auto-correlations. We suggest rewording the sentences as follows:

"The maximal relative changes in cross-correlation reach up to 18% of the value from the control period, in the case of auto-correlation it is almost 45%. This is because the auto-correlations are in general markedly lower than cross-correlations (the mean cross-correlation of individual models exceeds 0.8; the mean lag-1 auto-correlation is around 0.23)."

Line 116 – 118:
Reply: We agree, the formulations **"…except models 1A and 2A"** and **"…but the overall trend is a drop in the future"** complement the description of Figures 4 and 5 properly, we will add them to the text, thank you.

Lines 132 – 133, comment: *„there is no mention of Fig. 5 in the paper"*
Reply: Figure 5 is described in lines 116-118.

Line 156, comment: *"Here are 2 more cases where the authors have not heeded my previous corrections, which I've had to repeat; there are others which is an irritation for the reviewer"*
Reply: We apologize for this omission.