

## ***Interactive comment on “Seasonal predictability of the 2010 Russian heat wave” by P. Katsafados et al.***

### **Anonymous Referee #2**

Received and published: 12 February 2014

#### General comments:

This article, which investigate the impact and sensitivity of lead-time to seasonal forecasting, is of great interest and adds important results and knowledge to the research community. The study is relevant to be published in NHESS journal and I recommend that the article is accepted after minor corrections.

#### Specific comments (suggestions):

I suggest to clarify that the seasonal forecast ensembles are built up by using different lead-time initializations. Page 5058, lines 8-9 and page 5060, lines 10-13: It should be more clearly explained that the study investigate the predictability due to lead-time, as the initial condition.

C2543

Have there been other studies/articles on the same subject as in this article? If so, there could be a discussion and comparison of the results (perhaps in chapter Introduction or Conclusions).

Page 5058, line 23 - page 5059, line 2: Are those statements related to reference: Barriopedro et al., 2011? If so, then move reference to end of paragraph. If not, add reference for those statements.

Page 5059, lines 12-16: Is the analysis made by authors or can there be an reference to the statements?

Page 5062, lines 1-2: The Pakistan flooding event is not much investigated in this article and should not be mentioned as one of the main subjects.

Page 5064, chapter 4.1: Members 0422 and 0425 are pointed out in the context. How do those members relate to the other members? Do they show similarities to the other members or are they predicting the event better and are therefore chosen? This could be mentioned in this chapter.

Page 5065, line 14: Figure 12 is referred to before figure 11 (page 5066, line 4). Should change figure references and figure numbers to come in correct chronological order.

Page 5065, lines 16-18: The statement of divergence is related to Fig. 10b but according to me it is also true for Fig. 10a. The divergence looks very much alike in both Fig. 10a, b and should maybe be pointed out.

Page 5065, lines 20-22: The wording of “...stronger persistence...” is maybe not justified (see above comment) and it is also not consistent with the conclusion at page 5065, lines 25-28.

Page 5067, lines 6-8: Suggestion to include that this result is an outcome from a “medium range ensemble forecast model system”, which is a different model than what is used in this article.

C2544

Page 5079 – 5086: Figures 1-3, 5, 7-10 and 13-14 should have same coordinates (latitude/longitude at axes) and same projection. This would make it easier to compare and read the figures. Also, include in figure texts what parameters are plotted with shadings and contours.

Page 5082, Fig. 10: Perhaps figure b should be situated on the right hand of figure a and figure c should be situated below figure a.

Technical corrections (suggestions):

Page 5059, line 24: Change “affected” to “affecting”.

Page 5059, lines 26-28: Suggestion to change sentence; “For such intrinsically low-probability with long return period events the questions of whether the event could be predictable and over what lead time are of highly importance” to; “For such intrinsically low-probability events, with long return period, the questions of whether the events are predictable and over what lead time are of high importance” .

Page 5060, lines 6-8: Suggestion to change; “So, it is of great interest AGCMs to be able to resolve the main atmospheric mechanisms that trigger potential intense phenomena on various spatiotemporal scales and finally to produce credible forecasts.” to; “So, it is of great interest to understand if AGCMs are able to resolve the main atmospheric mechanisms that trigger potential intense phenomena on various spatiotemporal scales, and finally, to produce credible forecasts.”

Page 5060, lines 8-10: Should there be an reference here, to the models used? Maybe same as used at page 5062, line 7.

Page 5060, lines 13-14: Should there be a reference for the statement “...limit of few weeks to the predictability....” ? Similar to the reference at page 5067, line 7.

Page 5061, line 26: Suggestion to move reference (Fig. 5) to previous sentence.

Page 5063, lines 27: Add 'were' in sentence “.... model outputs were compared

C2545

against....”

Page 5064, line 12: Change “comparing against” to “compared to” in sentence “....more intense system comparing against...”.

Page 5064, line 13: It should be reference to (Fig. 7b) and not (Fig. 7a) in this sentence.

Page 5064, line 22: Suggestion to change to this “....blocking pattern which lasted only 5-6 days”.

Page 5066, lines 6-7: Change to “...predictability compared to the....”

Page 5067, line 3: Put a space in “The above mentioned....”

Page 5067, line 6: Take away 'is' and change to “This fact is also in agreement...”

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Interactive comment on Nat. Hazards Earth Syst. Sci. Discuss., 1, 5057, 2013.

C2546