

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

### **Anonymous Referee #1**

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#### **General Comments**

This is an interesting study investigating the seasonal predictability of the Russian heat wave during July and August 2010 using an ensemble of 61 members from simulations with the AGCM CAM3. The topic of seasonal forecasting is very important and I believe that their results indicating the weaknesses contribute to the ongoing research in this field. I think that the manuscript deserves publication after taking into consideration a few minor comments.

Specific Comments 1) Although the authors provide an adequate number of research articles for the specific heat wave at Eastern Europe and Russia, the introduction is lacking of references on the topic of seasonal predictability which is actually the main

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focus of this manuscript. There is a number of relevant articles already from the late 90s (e.g. Rowell, Journal of Climate, 1998) to recent ones (e.g. Hurrell et al., BAMS, 2009; Lee et al., Clim Dynamics, 2010 and 2011, Chowdary et al., JGR, 2010; Brunet et al., BAMS, 2010; Shapiro et al., BAMS, 2010; DelSole et al., GRL, 2013; and many others) that the authors take into account. 2) I think that the authors should discuss their results about the seasonal predictability in the framework of other relevant work more extensively. This is only done for the work of Matsueda et al., 2011. 3) Please refer if CAM3 has been used in previous studies for seasonal forecasting and especially if there are previous evaluation studies (articles or official technical reports) for its seasonal predictability. 4) The authors conclude that it is of great importance to investigate furthermore the performance of the LAF ensemble forecasting system during other recent extreme weather events although their study shows weak seasonal predictability of the Russian heat wave event. This is rather confusing especially for the non-experts of seasonal forecasting. Could the authors discuss in which sense the investigation of other extreme case studies is an added value, and which are the limitations and possible future developments for improving seasonal predictability.

Technical comments Page 7, lines 26-29: This is a long sentence that maybe needs rephrasing. Page 9, line 28: It should rather read "compared" instead of "comparing". Figures 1, 2, 3, 5, 7, 8, 9: Although it easy to figure out, it would be helpful for the reader to specify in the figure caption which parameter is plotted with color shade and which with contour.

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