Earth System
Dynamics
Discussions

Interactive comment on "Seasonal prediction skill of East Asian summer monsoon in CMIP5-Models" *by* Bo Huang et al.

Anonymous Referee #2

SUMMARY:

This study evaluates the previously found link between the East Asian summer monsoon (EASM) and ENSO in CMIP5 models. It is stated that initialization can in some models improve the connection between ENSO and the EASM, and thereby the prediction of the monsoon.

GENERAL ASSESSMENT:

This study addresses an important teleconnection and an important region that would strongly benefit from better predictions on seasonal timescales. It does however not become clear if this study is able to solve any of the raised issues, and it leaves many open questions as to the methods used and the improvements obtained. The methods

section has to be considerably improved. My biggest concern is that the results remain unclear to the point that it is difficult to judge if the paper is worthy of publication. It is e.g. unclear which start dates are used for the models, and if the study compares different start dates to each other, which would render the results not comparable and mostly useless. The paper often reads more like a thesis than a paper. It should be made sure to explain the terms only where the reader cannot be assumed to know them, and the methods should be much more clearly explained. Throughout the paper, several paragraphs are misplaced and should be moved to a different section – e.g. the summary should not introduce new figures, and the results should not have to introduce new methods. The summary could be better structured. The English has to be improved – in several places it is difficult to understand what the authors mean.

DETAILED COMMENTS:

Line 9: sub-seasonal predictability is never mentioned again in the paper, probably better to leave it out in the abstract

Line 15: the zonal wind where?

Lines 15/16 and 19 – 21 seem to contradict each other, please clarify

Line 25: to predict -> change to: of predicting

Line 25: initialization of what?

Line 32: residents -> people

Line 33: South Asian monsoon-SAM is confusing, I would suggest writing ": : :submonsoon systems, the South Asian monsoon (SAM) and the East Asian monsoon (EAM) (Wang: : :).

Line 37: improve English: : : :predictions: : : is: : :

Line 41: how so?

Line 44/45: there are not really two kinds of climate models, it should be described as some being atmosphere-only with surface forcing, with the others including an ocean, while the atmosphere model stays the same. The reader does not need 10 lines of explanation of what the difference between an AGCM and an AOGCM is.

Line 59: SST where?

Line 60: initialization of what?

Line 69: what is an SST indicator?

Line 75: improve English

Lines 88 – 89: why do only these systems provide data? how were the runs obtained? How about the entire CHFP database? Are these used or was there a different source? CHFP would also include consistent start dates.

Line 89: it is never mentioned which start dates are used here, it is only stated that several start dates exist for some of the models. Are you comparing the same start dates for all models? It does not seem so from the available data. Unfortunately, the table does not clarify this either. If different start dates are used, the comparison is likely useless and would have to be repeated with consistent start dates.

Line 89: What does un-initialized mean? Are the "uninitialized" runs computed for a certain time frame?

Line 91: "on each pre-year 1st November": improve English

Line 98: change to: The configurations of the six prediction systems are summarized in Table 2.

Line 114-116: how about comparing the mean state in the models first before having to include the mean state in the PCC? That would make things simpler and clearer.

Lines 118 – 120: this is not clear, improve English

Lines 130 – 140: a bit lengthy

Line 158: I don't understand this sentence

Lines 168: : :: this should not be a part of the results, this should come earlier

Lines 180-182: which season is depicted here? This will be crucial for understanding what the paper is trying to say

Line 191: unfortunately I don't know what a sandwich pattern is supposed to look like. Since these EOFs are talked about so much here, they should be shown in a figure. It should be made clear why it helps to compute EOFs for predictability.

Lines 203/206: what is ua? Zonal wind anomaly? Anomaly with respect to what?

Line 229: this should be part of the methods

Line 235: I don't see this in Fig. 5

Line 239: when is it initialized?

Line 245: why is the correlation between Nino3.4 and the SOI important for predictability of the monsoon? Explain!

Line 263: how is that defined? Which months are used?

Line 294: so why exactly is there an improvement from non-initialized to initialized models?

Line 301: you cannot introduce a new figure in the summary. This should be part of the results

Line 317: this should come much earlier

Line 358: what are the IRI models?

Line 359: most of the models used here are seasonal forecast models already, not sure what you are trying to say

Line 365: SST where?

Figure 3: should be better explained in the main text