Reply to reviewers

2. Anonymous Referee #2

Reviewer: Scientific and writing quality of the manuscript is below average. It does not offer new findings of treatments, and it has some typos and grammatically incorrect sentences.

Authors: We understand that the reviewers' criticism is possibly related to the issues raised by the first reviewer, which were addressed in the revised version of the manuscript.

After recalculations and reanalysis of the results, we checked the text and made many several edits that should have improved the readability of the text.

Reviewer: I find the analysis very elementary and even not useful at times. Lag correlation with SST may not explain biases in Amazon precipitation. Vertical temperature profile over the Amazon basin has different structure than the surrounding oceans due to the monsoon which leads to a different local convective behavior.

Authors: Lag correlation is an accepted technique, while we agree that the thermal structures play a role, analyzing these, and their impact on precipitation producing mechanisms would be another, quite different paper.

Reviewer: Also, the analysis does not touch on energetic controls of precipitation (moist static energy budget), particularly turbulent surface fluxes in the wet and dry seasons. Although accurate observations of these important fluxes may not be available, I expected at least a discussion.

Authors: We included a discussion as follows:

"Yin et al. (2012) used simulations of 11 models of CMIP5 to check whether precipitation is still underestimated on Amazon. The results showed that most models overestimate of moisture convergence and therefore precipitation in the ITCZ in the Atlantic or Eastern Pacific. This overestimation may intensify subsidence and moisture divergence on the Amazon, which contributes to a dry bias during the dry season.

Moreover, the authors argue that the dry bias in simulated precipitation in Amazonia is likely enhanced by a evapotranspiration-soil moisture-rainfall feedback, where, first underestimating cloudiness (and so overestimating available radiation at the surface) in the wet season, models estimate excessive ET, which dries the soil and later reduces ET and increases sensible heat flux in the subsequent dry season. Then, these biases may cause further enhancement in atmospheric radiative cooling and compensational subsidence, which in turn causes excessive moisture divergence and diminishes simulated rainfall."

More detailed discussion is out of the scope of the paper, since the idea of the study is to assess the possible influence of the adjacent oceans by CMIP5 models on precipitation in the Amazon and not check the thermodynamic structure.

Reviewer: Finally, utilizing ERA reanalysis is not favorable because of the many errors and biases the dataset contains.

Authors: Although we agree there may be uncertainties and biases in the ERA reanalysis products we have to rely on it and acknowledge that it is used for various other studies. The dataset has proven to be one of the best reanalysis on Amazon when compared for example, as the Modern-Era Retrospective Analysis for Research and Applications [MERRA, NASA] and Climate Forecast System Reanalysis [CFSR, NCEP]) (Lorenz, C. and Kunstmann, 2012).

Reference: Lorenz, C.; Kunstmann, H. The hydrological cycle in three state-of-the-art reanalyses: Intercomparison and performance analysis. Journal of Hydrometeorology, 13, 5, 1397–1420, 2012.