

Response to Editor's comments:

We thank and appreciate the Editor's effort in improving the quality of the manuscript. Please find below response to your comments.

1) page 6, line 7: "opposite sign ... compensates the fluxes..."? Do you mean "opposite sign ... compensates flux errors/biases..."? Please check!

Thanks for pointing this out. The sentence is re-written as "It is evident that both in DJF and JJA averages, the opposite sign in the TOA SW and LW effects nearly compensates the biases in the fluxes over the tropics in the net effects at the TOA."

2) To my understanding you want to know whether the step from std-res to hi-res leads to improvements in CRE results. If this observation is correct, you should avoid statements like that on page 19, line 32: "... a significant improvement ... in the std-res simulations ...". What you have instead is that the transition from std-res to hi-res leads to a significant degradation in this case. There might be similar sentences at other locations in the paper. Please keep always the direction from std-res to hi-res in mind in order to make reading not even more tedious. So if the hi-res results are better, there is an improvement, but if the hi-res results are worse, there is a degradation.

Thanks for this suggestion. I understand your point. But, apart from the sentence below, the rest of the manuscript has been written in a way so as to point out if increasing the resolution has a notable impact in our results.

Page 19, line 32:

However, a significant improvement in the SW bias over eastern Europe in the Std-res simulations at the SFC during NAOP is seen compared to that at the TOA, whereas, the Hi-res simulations better simulate the TOA LW CREs over continental Europe.

Rephrased as "However, the Hi-res models seem to amplify the positive SW bias over Eastern Europe at the SFC during NAOP compared to the Std-res model ensemble mean. On the other hand, the Hi-res models better simulate the TOA LW CREs over continental Europe."

3) **Page 28, line 23-25:** I wonder about the speculation here. "This suggests... vary strongly among the models. ... can ... be different". This speculation is not necessary. The modellers in the author team should know whether there are differences among the models. So please reformulate this in a affirmative fashion.

This is rephrased as "This suggests that the parameterization of SW radiative transfer and the treatment of cloud optical properties vary strongly among the models."

Additionally, we would like to re-phrase the following sentence to be more precise.

Page 13, line 4: Although the model biases in LW at the TOA during the positive phase of ENSO are small, clear hemispherical differences can be seen at the TOA in the ENP case characterized by negative biases in the northern and positive biases in the southern hemisphere.

"Although the model biases in LW at the TOA during the positive phase of ENSO are small, clear hemispherical differences can be seen over central and eastern Pacific at the TOA in the ENP case characterized by negative biases north of 5N and positive biases south of 5N."