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# *Interactive comment on* "Mitigation of the double ITCZ syndrome in BCC-CSM2-MR through improving parameterizations of boundary-layer turbulence and shallow convection" *by* Yixiong Lu et al.

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This is a great work to mitigate the double-ITCZ bias in BCC model by improving different model parameterizations. It was so impressive how much work have been done to achieve this. I have one comment related to the comparison between BCC-CSM2-HR and BCC-CSM2-MR on the double-ITCZ problem. As shown in my current work (Song and Zhang 2020), which shows that the increase of horizontal resolution of atmospheric model can reduce the seasonal double-ITCZ bias over the eastern Pacific by reducing the easterly wind bias crossing the Central America. We analyzed the CMIP5 models

by grouping them according to their model resolutions and designed experiments in CESM1. I always want to know to what extent this can also be applied to other models. For your case, I am wondering that if keeping the parameterizations same in both BCC-CSM2-HR and BCC-CSM2-MR, whether the higher-resolution model has smaller double-ITCZ bias. If you have done this kind of experiments, it is a great kindness of you to satisfy my curiosity. If you don't have such kinds of experiments handy, it is fine and just overlook my comments. Finally, this is a great work. I really love it.

Song, F., and G. Zhang, 2020: The impacts of horizontal resolution on the seasonally-dependent biases of the northeastern Pacific ITCZ in coupled climate models, Journal of Climate, 33, 941-957.

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