

Interactive comment on “Description and basic evaluation of BNU-ESM version 1” by D. Ji et al.

Anonymous Referee #4

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This paper describes the configuration of Beijing Normal University Earth System Model. Authors also evaluate the performance to simulate the mean climate and climate variability using CMIP5 simulations of BNU-ESM. I think that the description and results from new earth system model are sufficiently interesting to merit publication. However, there are a number of issues that require attention as described below. Addressing these issues could make the paper more publishable. So I have recommended that this manuscript could be accepted after minor revision.

(1) Although there is a model description, some explanation to enlighten about the basic philosophy and logic to choose components of BNU-ESM will be helpful to understand the goal of development of BNU-ESM (or main goal of this new development). I wonder why only some components are chosen differently from CCSM4.0 (or CESM). Please remark how to keep up this model under circumstances of constant upgrades of original modules (e.g. CAM, MOM, CICE).

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(2) To add a plot showing zonal mean OLR at TOA is recommended to show the global net energy balance. To add basic fields including vertical structure of zonal mean temperature, zonal wind, and specific humidity, cloud water/ice content is recommended.

(3) Since this model simulate stronger interannual variability to the observed, to add a plot to show the amplitude of response of circulation fields to the interannual variability of SST anomalies is recommended. (e.g time series of SOI, regressed field of circulations by NINO3.4 or time series of leading EOF mode of SST).

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