

Evaluation of terrestrial carbon cycle processes in MIROC-ES2L

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Future climate projection by Earth system models are based on the interactive simulation of climate and carbon cycle, and thus the detail evaluation on carbon cycle is necessary for improving the performance of climate-carbon cycle projection. A new Earth system model, MIROC-ES2L, has developed and CMIP6 experiments have been performed using the new model. We presented in JPGU2019 the overview of the biogeochemical processes of the model, and in this research, we examined in detail the terrestrial carbon cycle (biogeochemical) processes of the model. By comparing with observation-based global products, we confirmed the spatial distribution of primary productivity, forest carbon, and soil organic carbon are reasonably captured by the model, but the comparison on the carbon fluxes seasonality / phenology suggested there is room to improve.

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