

Basic evaluation of MIROC6 and current status of CMIP6 experiments

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The sixth version of the Model for Interdisciplinary Research on Climate (MIROC), called MIROC6, was cooperatively developed by a Japanese climate modeling community. Overall reproducibility of mean climate and internal climate variability in MIROC6 is better than that in the previous version (MIROC5). The tropical climate systems (e.g., summertime precipitation in the western Pacific and the eastward propagating Madden-Julian Oscillation) and the mid-latitude atmospheric circulations (e.g., the westerlies, the polar night jet, and troposphere-stratosphere interactions) are significantly improved in MIROC6. These improvements can be attributed to the newly implemented parameterization for shallow convective processes and to the directly resolved stratosphere. In the present study, simulated mean climate, internal climate variability in MIROC6 are evaluated and briefly summarized in comparison with MIROC5 and observations. Using MIROC6, designated simulations tackling a wide range of climate science issues, as well as seasonal-to-decadal climate predictions and future climate projections, are currently ongoing with an aim towards contributing to the sixth phase of the Coupled Model Intercomparison Project (CMIP6). Preliminary results of historical climate simulations from the middle of the 19th century, climate projections from the present to the end of the 21th century based on future scenarios of the Shared Socio-economic Pathways, and initialized climate predictions on seasonal-to-decadal timescales will be given in this talk.

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