

A design for the new Earth System Model with terrestrial carbon/nitrogen cycle processes

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Changes in the natural environment that are the result of human activities are becoming evident, and these changes are interrelated and can not be investigated without interdisciplinary collaboration between scientific fields. In order to understand the interrelated mechanism within the Earth's environment and to evaluate/project the anthropogenic impact on it, Earth system models (ESMs) have been developed by incorporating the biogeochemical processes of terrestrial/marine ecosystems into atmosphere-ocean general circulation models. These models have joined the Coupled Model Intercomparison Project (CMIP) and contributed to the assessment report of IPCC. We finished a process of reviewing our modeling and scientific activities up to the IPCC 5th assessment report, and we have started to design a new generation of ESMs. In this presentation, we briefly summarize the scientific/modeling tasks with ESM, and illustrate the design of the new ESM we are now developing.

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