

Findings in climate change and global carbon cycle from model inter-comparison analyses

HAJIMA, Tomohiro^{1*}

¹Japan Agency for Marine-Earth Science and Technology

Interactions between climate and carbon cycle are essential for making long-term climate projection, since some part of carbon cycle processes in land and ocean display slow responses to environmental change in a longer timescale, with giving feedbacks on climate. Climate-carbon cycle models, sometimes referred as "Earth system models (ESMs)", have been developed and utilized for the long-term climate projection. Recent model inter-comparison analyses have revealed some problems in the models, and provided new findings on climate-carbon cycle relationships. For example, a new index "TCRE" is introduced in the latest IPCC report. This index can capture the entire response of global climate-carbon cycle system to anthropogenic CO₂ emission, with suggesting some useful political messages. In this presentation, new findings on climate-carbon cycle system such as TCRE will be reviewed, based on the results from model inter-comparison analyses.