Team MIROC: Reproducibility and predictability of decadal climate variations in MIROC

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We have developed a high-resolution climate model named MIROC4h (T213L56 Atm. 0.28125^ox0.1875^o L48 Ocn.) and a medium-resolution climate model named MIROC5 (T85L40 Atm. 0.56^o-1.4^o L50 Ocn.) for near-term climate prediction experiments. Initialization for the near-term climate prediction is carried out by the data assimilation for the ocean temperature and salinity anomalies in each model. We have conducted the series of experiments under CMIP5 protocol, using MIROC4h, MIROC5, and medium-resolution setup of the previous version of MIROC, MIROC3m. Multi-model ensemble by MIROC3m, MIROC4h, and MIROC5 of globally averaged SAT, in which global warming trend is eliminated, has a high skill (the correlation coefficient to the observation is more than 0.7 in the first five years, and about 0.6 in the 6-10 years). Especially in the Atlantic, skills of the Atlantic multidecadal oscillation (AMO) in MIROC4h and MIROC5 are more than 0.7 in the first five years, and those are more than 0.8 in 3-7 years. We will also discuss about the predictability of PDO and decadal ENSO.