The simulated tropical Pacific variability by applied supermodelling to the Kiel Climate Model

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Super modelling by combining imperfect models (SUMO) has huge potential for improving the quality of current climate simulation and prediction. The SUMO approach has been applied to improve the simulation of Tropical Pacific in the ECHAM-MPIOM coupled model. However, it has not been demonstrated in other models and thus the sensitivity of the results to model configuration is not clear.

In order to confirm the SUMO method we apply it in the Kiel Climate Model (KCM). KCM is an ECHAM-NEMO coupled model. Thus, NEMO is a new ocean model for SUMO and here it has a much higher resolution in the tropics than in the ECHAM-MPIOM study. Furthermore, atmospheric resolution is also increased. As in the ECHAM-MPIOM study, two main convection schemes in ECHAM are used to construct the SUMO of KCM. The Tropical Pacific will be analysed in detail, and the result of application of SUMO to KCM will be compared to those in ECHAM-MPIOM. The preliminary findings will be presented.