



Climate Change Projection with Reduced Model Systematic Error over Tropic Pacific

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The tropical Pacific is considered as a major driver of the global climate system. However, realistic representation of the equatorial Pacific remains a challenge for state-of-the-art global circulation models (GCMs). For example, the multi-model ensemble mean of the CMIP5 historical simulation exhibits large biases of sea surface temperature. Here we construct an interactive model ensemble (SUMO) by coupling two atmospheric GCMs (AGCM) with one ocean GCM (OGCM). Through optimal coupling weights, synchronization of the atmospheric models over tropical Pacific is enhanced and the dynamic and thermodynamic feedback over Pacific of the GCM become realistic. A set of climate change projections is performed with SUMO and results will be contrasted with conventional multi-model scenario simulations and a standard flux corrected model version to identify main differences.