

Proof



CONTROL ID: 1800274

TITLE: On the weighting of CMIP5 multimodel ensembles in temperature simulation over Eurasia

ABSTRACT BODY: Outputs from Global Circulation Models (GCMs) form the main scientific basis for several climate change assessment reports sponsored by the Intergovernmental Panel on Climate Change (IPCC) and are widely used in global change research. GCMs can be used to simulate present-day and project future climate conditions under different scenarios, and hence inform decision makers regarding policy making such as potential mitigation measures and adaptation strategies. Because single models are over-confident, multimodel ensembles contain the information from all participating models and embrace distinctly different physical parameterizations and consequently moderate the uncertainties arising from different parameterizations and dynamical cores in the different GCMs. Consequently, use of multi-model ensembles from global climate models to simulate current and future climate change has flourished as a research topic during recent decades. With the Climate Model Intercomparison Projection Phase 5 (CMIP5) near completion, it is necessary to evaluate whether the outputs from CMIP5 GCMs are able to represent fully the observed climate trend and statistical features in the 20th century. Meanwhile, the future trends of temperature for different scales and emission scenarios are projected based on the posterior model probabilities estimated by multi-models ensemble methods. This study uses different weighting multimodel approach to study the trend in temperature change in Eurasia using climate simulations from the CMIP5. Observed data from 1901-2005 are used for this study. The trend is estimated based on change in decadal scale. Bayesian weights are computed for each 10-year period. The change in weights is analyzed. The suitability of using the weights computed from the past data to predict temperature in the future is evaluated.

CURRENT SECTION/FOCUS GROUP: Global Environmental Change (GC)

CURRENT SESSION: GC049. Environmental, Socio-Economic and Climatic Changes in Northern Eurasia and their Feedbacks to the Global Earth System

INDEX TERMS: 1616 GLOBAL CHANGE Climate variability, 1627 GLOBAL CHANGE Coupled models of the climate system.

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