

Reliability of CMIP5 models with respect to the physical climate, including paleo studies

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The WCRP Working Group on coupled Modelling (WGCM) has been organizing increasingly comprehensive coupled model intercomparison projects. The most recent -- the fifth in the series -- is called CMIP5. By design, these intercomparison projects are intended to allow direct comparison of models against available observations, and against one another. The results of such intercomparisons provide a basis for quantitatively evaluating the performance of climate models and for generating ensemble projections of future climate change. As such they are an important contribution to the IPCC assessment process. This talk will provide an overview of model intercomparison results, with particular emphasis on evaluation of model performance. This sort of model evaluation has evolved over the years to make increasing use of model performance 'metrics', which allow compact, quantitative summaries of model quality. Such metrics may be used to explore modelled mean climate, climate variability, and the response to external forcing -- both natural and anthropogenic. Of particular interest in this talk are results which assess models' climate sensitivity (using 20th century and paleo-climate data), as this has potential value in constraining or refining model projections of future climate change.