



Climate Envelopes: Extracting Useful Information from Climate Ensembles

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Substantial effort is currently focused on providing predictions of the effects and impacts of climate change on regional spatial scales. Such predictions are usually based on the simulations of complex climate models and are often thought to be critical to adaptation planning.

Here we present a discussion of the important issues in decision making under climate change uncertainty. In common with other studies we emphasize the need for decisions which are robust to large uncertainties and the development of resilience in the system of interest. In using model simulations we present the climate envelope approach to uncertainty. As large, climate timescale ensembles exploring different sources of uncertainty, become more widespread the range of regional behaviour in simulated variables often, but not necessarily, grows. The weighting and extraction of probabilities from such ensembles is a source of much debate in the academic modelling community. It is not clear whether such debates can be resolved conclusively or whether many decisions are likely to be influenced by the details of such analysis. We present a process by which the sensitivity of the decision can be studied and the potential impact of the range of uncertainty from modelling experiments can be usefully incorporated.