

**Communicating Uncertainties for Those Insuring Future Climate Change**

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**Abstract**

The evolution of applied climate science from a focus on "Has climate changed?" to "How will climate change in the future?" suggests significant changes in the communication of uncertainty and ignorance, of what is precisely defined versus what is relevant, of where vague physical insight is of greater value than high-resolution maps of systematic simulation error. The relevance of multi-model mean values in policy is illustrated.

Decision support is enhanced when both insights and uncertainties propagate from climate science to application, often through one or more layers of computer modelling, experimental statistics, and/or extreme economics, before reaching applications in policy-making and industry. This exercise would benefit from more aggressive participation from numerate decision makers, helping climate scientists and statisticians not only design future climate research, but also allowing a clear public definition of what information we about the future we expect to be robust, and what (currently) depends on the details of our understanding and our models (which we expect to change significantly as the science advances).

Clear communication uncertainties within the climate sciences, with political and industrial decision makers, and to the general public may prove of great value in facing the challenges posed by anthropogenic climate change.