

## **Ensemble performance, model independence and observational constraints**

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The interpretation and analysis of climate model outputs is an important topic of research, but the wide range of approaches used have sometimes been inconsistent. We will outline some fundamental concepts relating to model independence, and present the results of some analyses applied to the CMIP3 ensemble. Some guidelines for unequal weighting, or discarding of particular models, will also be given. Finally, we investigate the theoretical basis and validity of claims that the CMIP3 ensemble under-represents uncertainty indicated in observational analyses.