

Temporal and spatial scales of the climate forcing and feedbacks

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The climate system is a highly connected network of physical processes, each of which having its own time and space characteristics. The climate system develops differently under instantaneous and delayed external influences, and the path upon which the climate system develops is subject to a combination of internal and external factors, whose effect is most strongly felt when their efforts are simultaneously focused upon a particular location. It has long been asked how we may extract responses, generated as a result of direct forcing upon climate systems from feedback-based responses to forcing, through the usage of observational and model-simulated data. We use observations together with the AR4 data archive to statistically investigate temporal and spatial scales of climate forcing and feedbacks. Our results may be used in the recognition of the causes of differences between observations and models, and between models themselves.