



The recent global surface temperature record in the context of long-term anthropogenic climate change

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We review what is known about the recent observed reduction in global-mean surface-warming trend and the ability of climate models to simulate this “hiatus”. A particular challenge lies in the evaluation of an ensemble of model simulations vis-à-vis internal variability in the observed record. Furthermore, trends in both observations-based and simulated radiative forcing need to be taken into account, as well as the models’ responses to these trends.

Our starting point is the recent IPCC Working Group 1 assessment that the observed hiatus is due, in roughly equal measure, to internal climate variability and a downward trend in natural radiative forcing. From the recent flurry of publications on the topic, we infer a need better to characterize the spatial pattern of recent surface temperature trends, including the processes leading to these patterns, as well as taking into account a multiplicity of causes of the hiatus instead of focusing on single-cause explanations. Finally, we place the observed surface-warming hiatus into the context of long-term anthropogenic climate change, which goes on unabated as witnessed by the radiative imbalance of the climate system together with its ongoing energy uptake.