

# Our ability to model past climates does not guarantee future success

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(PhysOrg.com) -- New research from the University shows that past trends in climate must be very carefully understood before using them to model the future.

Climate scientists found that models are generally good at seeing past trends - but that there are important differences that must be recognised when predicting future [climate](#) patterns.

Researchers looked at these [climate models](#) to examine their trends in the Arctic and the Tropics, and found that eight of the 11 models studied did a reasonable job of reproducing these trends. However, most models could not reproduce the 1920-1940 warming particularly in the tropics, and additionally the researchers found that the models often got similar trends for different reasons.

Ms Julia Crook, who led the study, said: "Models reproduced the Arctic and [tropical](#) warming from a combination of forcings (e.g. carbon dioxide and particulate changes), feedback mechanisms (e.g. ice melt) and transport of heat in weather and ocean currents. When we looked at our results we found that the contribution from each term varied considerably amongst the models."

Professor Piers Forster, her co-author, added: "Although climate models agree on the past it is hard to say which model is best, and in the future their different set-ups cause their climate predictions to diverge from one another."

"For this reason it is vital that we use a range of models, and improve understanding of basic processes, if we are to refine our ability to accurately predict the climate patterns of the future."

The research is published as an editor's highlight in the September issue of the *Journal of Geophysical Research*.

**More information:** Crook, J. A., and P. M. Forster (2011), A balance between radiative forcing and climate feedback in the modeled 20th century temperature response, *J. Geophys. Res.*, 116, D17108, [doi:10.1029/2011JD015924](https://doi.org/10.1029/2011JD015924)

Provided by University of Leeds

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