Peer-reviewed pocket-calculator climate model exposes serious errors in complex computer models

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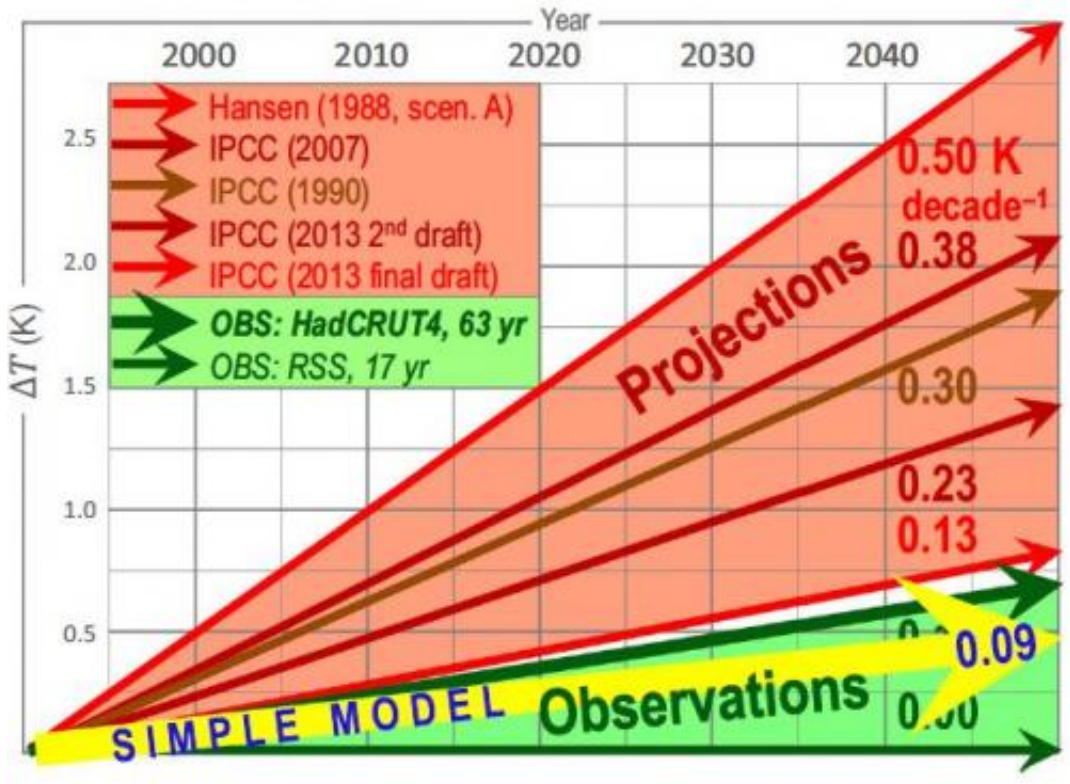

Near-term global warming projections (brick-red region) on[0.13, 0.50] K decade-1, compared with observations (green region)that fall on [0.0, 0.11] K decade-1, and the simple model's 21stcentury warming projections (yellow arrow), falling on 0.09 [0.06,0.12] K decade-1. Credit: Science China Press

A major peer-reviewed climate physics paper in the first issue (January

2015: vol. 60 no. 1) of the prestigious *Science Bulletin* (formerly *Chinese Science Bulletin*), the journal of the Chinese Academy of Sciences, exposes elementary but serious errors in the general-circulation models relied on by the UN's climate panel, the IPCC. The errors were the reason for concern about Man's effect on climate. Without them, there is no climate crisis.

The IPCC has long predicted that doubling the CO2 in the air might eventually warm the Earth by 3.3 °C. However, the new, simple model presented in the *Science Bulletin* predicts no more than 1 °C warming instead - and possibly much less. The model, developed over eight years, is so easy to use that a high-school math teacher or undergrad student can get credible results in minutes running it on a pocket scientific calculator.

The paper, Why models run hot: results from an irreducibly simple climate model, by Christopher Monckton of Brenchley, Willie Soon, David Legates and Matt Briggs, survived three rounds of tough peer review in which two of the reviewers had at first opposed the paper on the ground that it questioned the IPCC's predictions.

When the paper's four authors first tested the finished model's global-warming predictions against those of the complex computer models and against observed real-world temperature change, their simple model was closer to the measured rate of global warming than all the projections of the complex "general-circulation" models:

Next, the four researchers applied the model to studying why the official models concur in over-predicting global warming. In 1990, the UN's climate panel predicted with "substantial confidence" that the world would warm at twice the rate that has been observed since.

The very greatly exaggerated predictions (orange region) of atmospheric

global warming in the IPCC's 1990 First Assessment Report, compared with the mean anomalies (dark blue) and trend (bright blue straight line) of three terrestrial and two satellite monthly global mean temperature datasets since 1990.

The measured, real-world rate of global warming over the past 25 years, equivalent to less than 1.4° C per century, is about half the IPCC's central prediction in 1990.

Medium-term global temperature trend projections from FAR, extrapolated from January 1990 to October 2014 (shaded region), vs. observed anomalies (dark blue) and trend (bright blue), as the mean of the RSS, UAH, NCDC, HadCRUT4 and GISS monthly global anomalies. Credit: Science China Press

The new, simple climate model helps to expose the errors in the complex models the IPCC and governments rely upon. Those errors caused the over-predictions on which concern about Man's influence on the climate was needlessly built.

Among the errors of the complex climate models that the simple model exposes are the following -

The assumption that "temperature feedbacks" would double or triple direct manmade greenhouse warming is the largest error made by the complex climate models. Feedbacks may well reduce warming, not amplify it.

The Bode system-gain equation models mutual amplification of feedbacks in electronic circuits, but, when complex models erroneously apply it to the climate on the IPCC's false assumption of strongly net-amplifying feedbacks, it greatly over-predicts global warming. They are using the wrong equation.

Modellers have failed to cut their central estimate of global warming in line with a new, lower feedback estimate from the IPCC. They still predict 3.3 °C of warming per CO2 doubling, when on this ground alone they should only be predicting 2.2 °C - about half from direct warming and half from amplifying feedbacks.

Though the complex models say there is 0.6 °C manmade warming "in the pipeline" even if we stop emitting greenhouse gases, the simple model - confirmed by almost two decades without any significant global warming - shows there is no committed but unrealized manmade warming still to come. There is no scientific justification for the IPCC's extreme RCP 8.5 global warming scenario that predicts up to 12 °C global warming as a result of our industrial emissions of greenhouse gases.

Once errors like these are corrected, the most likely global warming in response to a doubling of CO2 concentration is not 3.3 °C but 1 °C or less. Even if all available fossil fuels were burned, less than 2.2 °C warming would result.

Lord Monckton, the paper's lead author, created the new model on the basis of earlier research by him published in journals such as Physics and Society, UK Quarterly Economic Bulletin, Annual Proceedings of the World Federation of Scientists' Seminars on Planetary Emergencies, and Energy & Environment. He said: "Our irreducibly simple climate model does not replace more complex models, but it does expose major errors and exaggerations in those models, such as the over-emphasis on positive or amplifying temperature feedbacks. For instance, take away the erroneous assumption that strongly net-positive feedback triples the rate of manmade global warming and the imagined climate crisis vanishes."

Dr Willie Soon, an eminent solar physicist at the Harvard-Smithsonian Center for Astrophysics, said: "Our work suggests that Man's influence on climate may have been much overstated. The role of the Sun has been undervalued. Our model helps to present a more balanced view."

Dr David Legates, Professor of Geography at the University of Delaware and formerly the State Climatologist, said: "This simple model is an invaluable teaching aid. Our paper is, in effect, the manual for the model, discussing appropriate values for the input parameters and demonstrating by examples how the model works."

Dr Matt Briggs, "Statistician to the Stars", said: "A high-school student with a pocket scientific calculator can now use this remarkable model and obtain credible estimates of global warming simply and quickly, as well as acquiring a better understanding of how climate sensitivity is determined. As a statistician, I know the value of keeping things simple and the dangers in thinking that more complex models are necessarily better. Once people can understand how climate sensitivity is determined, they will realize how little evidence for alarm there is."

More information: Christopher Monckton, Willie W.-H. Soon, David

R. Legates, William M. Briggs. Why models run hot: results from an irreducibly simple climate model. *Science Bulletin*, 2015, 60(1): 122-135. www.scibull.com:8080/EN/abstra … bstract509579.shtml#

Provided by Science China Press

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