

Climate simulations: Recognize the 'Hot Model' Problem

Future projections of climate rely on coupled climate models, but **those models vary in sensitivity to increasing CO₂**, a key metric that largely determines how much climate will change under any specific scenario.

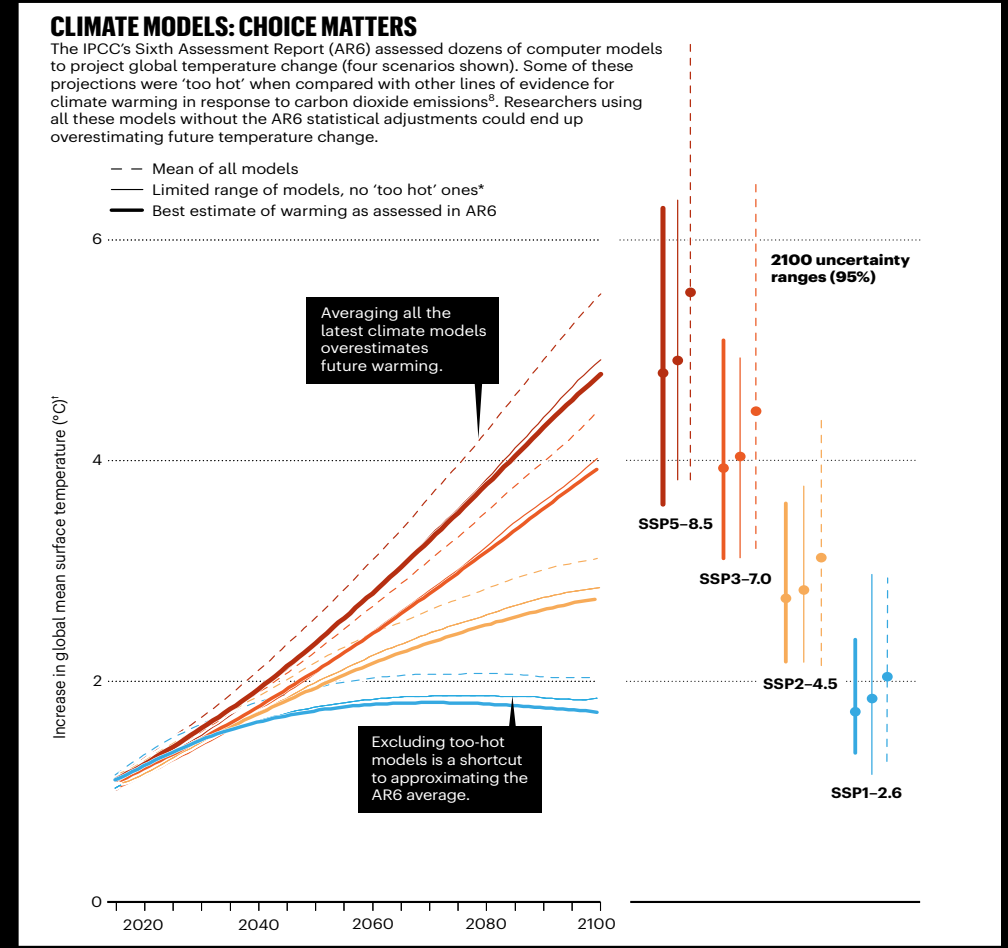
About a quarter of the models are too sensitive (based on constraints) and **therefore project too much warming.**

The average of the all the models has historically outperformed any individual model – **until now.**

For the first time, **the average is warmer than the most recent projections** from the Intergovernmental Panel on Climate Change (IPCC), which accounted for 'hot models.'

We demonstrate how researchers can apply similar statistical and observational methods like IPCC's and thus project future climate states that are much more in line with the IPCC assessed warming.

The NASA GISS model fortunately has a sensitivity in line with the IPCC assessment.



Hausfather, Z., K. Marvel, G. A. Schmidt, J. Nielsen-Gammon, and M. Zelinka (2022) Climate simulations: recognize the 'hot model' problem. *Nature*. 605, 26-29. doi:10.1038/d41586-022-01192-2