

Rethinking climate modelling to prepare for even hotter temperatures

January 6 2020



Credit: CC0 Public Domain

Improper adoption of climate impact modeling could leave us ill prepared for even higher temperatures and more frequent heatwaves, according to new research.

Researchers compared two major climate modeling methods, transient climate where the [global temperatures](#) are consistently rising over the next 80 years and equilibrium climate where the temperatures rise and reach a steady equilibrium over the course of centuries.

Published in *Nature Climate Change*, the study found that, in order to be effective, [climate change policies](#) need to take into account the significant differences between transient and equilibrium climate models.

More than 90 percent of the world's population would experience higher local temperatures and twice the number of heatwaves as per transient climate modeling compared with equilibrium modeling at the same global temperature.

Globally, emissions and climate change targets, including those set by the 2015 Paris Agreement, are more often based on equilibrium climate models.

Lead researcher Dr. Andrew King from the University of Melbourne's School of Earth Sciences said that it would be more appropriate to also take into account transient modeling to prepare climate change policies for the near future.

"Differences in methods used to simulate future climates could lead to inadequate information and development of ineffective policies," Dr. King said, "especially in building resilience for future extreme heat events."

The researchers used simulated future worlds to compare the two climate modeling methods.

The transient future climate model showed that the northern hemisphere

would experience warmer average temperatures in summer. The researchers also observed that poorer regions of the world had a greater probability of hot seasons.

The study concluded that using multiple modeling methods would more comprehensively help to examine the impacts of the Paris Agreement global warming levels.

"If we manage to implement effective policies and meet the Paris Agreement goals we will benefit from fewer hot summers and, in some populated areas, we should see a reduction in heat extremes relative to the current [climate](#)," Dr. King said.

More information: Andrew D. King et al. Global and regional impacts differ between transient and equilibrium warmer worlds, *Nature Climate Change* (2019). [DOI: 10.1038/s41558-019-0658-7](https://doi.org/10.1038/s41558-019-0658-7)

Provided by University of Melbourne

Citation: Rethinking climate modelling to prepare for even hotter temperatures (2020, January 6) retrieved 10 April 2024 from

<https://phys.org/news/2020-01-rethinking-climate-hotter-temperatures.html>

<p>This document is subject to copyright. Apart from any fair dealing for the purpose of private study or research, no part may be reproduced without the written permission. The content is provided for information purposes only.</p>
--