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The oceans may be lulling us into a false sense of climate security

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What the authors find casts severe doubt on other work which had oversold the role of natural climate's ability to halt global warming for the next 15 years. Instead, by correcting others' errors, the new paper shows that things may be worse than we thought.

First, some definitions. The authors of this paper, in particular Michael Mann, are well known in the scientific community for researching various natural climate processes that recur periodically. These processes are often called oscillations and they are key components to short-term climatic fluctuations. The two oscillations focused on in this paper are the Atlantic Multidecadal Oscillation (AMO) and the Pacific Decadal Oscillation (PDO).

The AMO is a cyclical variation in North Atlantic temperatures that lasts for 50–70 years. On the other hand, the PDO can actually be thought of as a short (16–20 year process) and a longer (50–70 year) process. Currently, the oceans are characterized by a slightly positive AMO and a more negative PDO. A [recent publication](#) discusses the role of the PDO and the continued warming of the planet, readers can go there for a basic description.



The authors focus attention on the longer of the two PDO processes which is multidecadal and they ask whether the current status of the oceans can explain what we are observing at the Earth's surface. What they find is interesting. These oscillations are *"found to explain a large proportion of internal variability in Northern Hemisphere mean temperature."* The authors also show that other researchers who have incorrectly defined natural variability using simple linear detrending have been mistaken.

In fact, recently published work on the climatic "[stadium wave](#)," which is a highly speculative interconnection of climatic waves that reportedly travels around the globe, is likely not correct. According to this new paper, their analysis *"reveals any putative correlation between the AMO and the PMO (the longer part of the PDO) and arguments of a stadium wave climate signal to be an artifact of the linear detrending approach."*

Some recent work, including publications of the "stadium wave" advocates, have argued that large parts of the changes we've observed in temperatures are attributed to these oscillations. The new research shows that *"the methods used in these studies tend to inflate and distort the estimated internal variability owing to an incorrect partition of internal and forced variability"*.

Here is what Dr. Michael Mann had to say.

*Our work reinforces the notion that there is no pause in human-caused global warming. If anything, we've been lulled into a false complacency by the fact that internal oscillations in the climate system temporarily masked some of that warming. That may come back to bite us as these oscillations swings back in the other direction and add to global warming in the decades ahead.*

The study's lead author, Byron Steinman told me,

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*There is inherent randomness in the climate system and a negative trend in these*

*random oscillations is apparently the reason for the recent slowdown in surface temperature increase. When this trend reverses, warming will accelerate and this likely will impose substantial burdens on human society.*

So in the end, what does this all mean? Well first, as I've written here before, [there has been no pause of global warming](#). The real story of global warming is told in the continual and non-stop warming of the oceans. The whole story of the so-called "pause" is related to a slowdown in temperature increases in the lower part of the atmosphere. But this "pause," as shown by the current research, is merely a result of natural climatic variations that move heat around in the Earth's climate. These variations have likely suppressed temperature changes in the atmosphere, moved heat deeper into the oceans, and lulled us into a false sense of security that our current climate will continue indefinitely. We should not be so pacified.

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