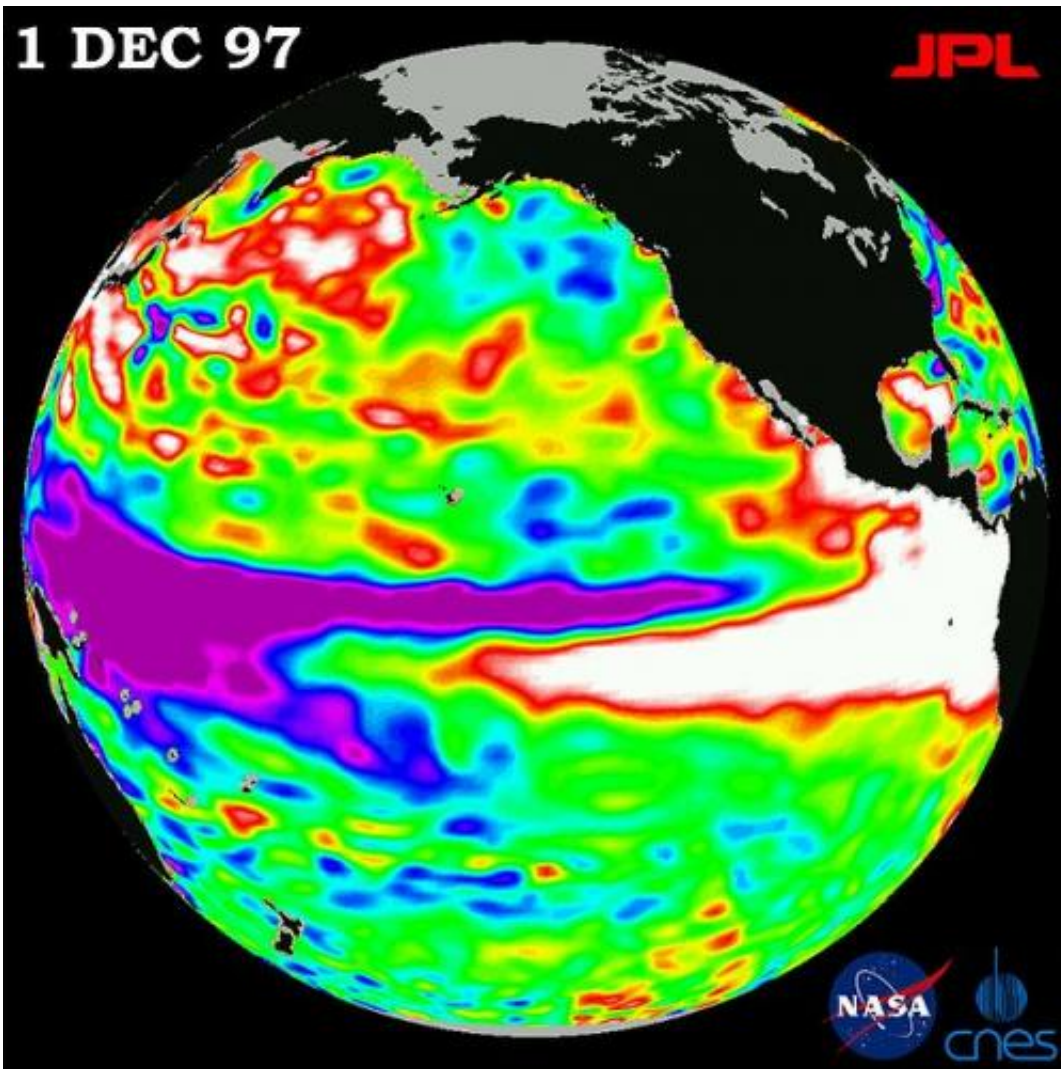


Researchers suggest controversial approach to forecasting El Nino

February 11 2014, by Bob Yirka



The 1997 El Nino seen by TOPEX/Poseidon. Credit: NASA

(Phys.org) —An international team of researchers has ignited a controversy over their claim to be able to predict El Niño up to a year in advance. In their paper published in *Proceedings of the National Academy of Sciences*, the team claims their method, which relies solely on atmospheric temperature readings, accurately predicted the last two El Niño years.

El Niño, is of course, a non-seasonal change of weather patterns in different parts of the world—all connected to a change in upper sea level temperatures along the equator. Warm water from below is pushed up, causing [sea temperatures](#) near the surface to be abnormally high as it moves towards the Americas. The result is generally more rainfall on the western coasts of North and South America as trade winds carry the moisture to land and droughts in other places such as Australia and Indonesia. By deploying an array of floating [temperature sensors](#) throughout the pertinent part of the ocean, scientists have been able to predict with a high degree of accuracy when an El Niño will occur—for up to six months. In this new effort, the researchers claim that using only atmospheric air [temperature readings](#) above the Pacific and the Equator, they are able to predict an El Niño up to a year in advance.

The new technique is based on data and analysis of patterns that link [air temperatures](#) over the ocean at the equator with temperatures over the rest of the Pacific Ocean. Their analysis showed that when the two temperature readings are closely linked, the odds of an El Niño go up—enough to allow for relative percentages to be calculated. Their data shows, they say, that that for the year coming up, 2014-2015, there is a 75 percent chance of an El Niño occurring.

Other researchers thus far aren't as confident of the team's results—they suggest that the limited amount of data the researchers had available to them means their predictions are premature. Others contend that it's just not possible to predict such a complicated weather event using such a

simplistic approach. For this coming year, it may not matter, as most other climatologist using conventional methods are also predicting this will be an El Niño year as well.

More information: Very early warning of next El Niño, Josef Ludescher, [DOI: 10.1073/pnas.1323058111](https://doi.org/10.1073/pnas.1323058111)

Abstract

The most important driver of climate variability is the El Niño Southern Oscillation, which can trigger disasters in various parts of the globe. Despite its importance, conventional forecasting is still limited to 6 mo ahead. Recently, we developed an approach based on network analysis, which allows projection of an El Niño event about 1 y ahead. Here we show that our method correctly predicted the absence of El Niño events in 2012 and 2013 and now announce that our approach indicated (in September 2013 already) the return of El Niño in late 2014 with a 3-in-4 likelihood. We also discuss the relevance of the next El Niño to the question of global warming and the present hiatus in the global mean surface temperature.

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