

Study examines iceberg shifts in North Atlantic

January 16 2014



Credit: AI-generated image ([disclaimer](#))

(Phys.org) —Some Heinrich events – periodic massive iceberg surges into the North Atlantic that were previously thought to have weakened the global ocean conveyor belt circulation and sent Earth's climate into the deep freeze – may actually have been caused by changes in atmospheric circulation patterns, say a team of researchers that includes

two Texas A&M University professors.

Matthew Schmidt, associate professor of oceanography, and Ping Chang, professor of oceanography and atmospheric science and director of the Texas Center for Climate Studies, along with colleagues from Georgia Tech, Princeton, the Woods Hole Oceanographic Institution, the University of Cambridge and Germany's University of Bremen, have had their findings published in the latest issue of *Nature Geoscience*.

To make this discovery, the researchers studied the chemistry of shells produced by benthic foraminifera, single-celled organisms that live near the sea floor. These benthic foraminifera were collected from sediment cores recovered from the margins of the Florida Straits. By studying the oxygen isotope composition of the shells, the researchers were able to reconstruct past changes in Florida Current transport, which is directly related to the strength of the global conveyor belt circulation.

Researchers have known for years about Heinrich Events, periods of extreme cold in the North Atlantic. These events were named for the geologist who first discovered them, Hartmut Heinrich. They occurred during the last ice age when immense icebergs broke loose from glaciers, and as they melted, deposited ice rafted debris on the sea floor. Six of these Heinrich events have been identified, and they are known as H1 through H6.

"While there is evidence that the last Heinrich Event that occurred around 17,000 years ago was indeed caused by a dramatic reduction in the [ocean](#)'s conveyor belt circulation, our new reconstruction of ocean circulation patterns during some earlier Heinrich Events, that occurred during the last ice age between 20,000 and 30,000 years ago, did not reveal significant changes in ocean circulation," Schmidt explains.

"Nevertheless, these Heinrich Events were experienced worldwide, so they must have been transmitted via the atmosphere."

Schmidt says that the study "has important implications for our understanding of the mechanisms of abrupt [climate](#) change in the past. The more we know about how climate changed in the past, the better prepared we will be for predicting future climate variability."

Provided by Texas A&M University

Citation: Study examines iceberg shifts in North Atlantic (2014, January 16) retrieved 2 May 2024 from <https://phys.org/news/2014-01-iceberg-shifts-north-atlantic.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>
--