

Atlantic to Pacific feedback discovered

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French scientists say an exchange of water vapor from the Atlantic to the Pacific might be an important feedback mechanism for abrupt climatic changes.

Researchers say the global ocean circulation during the past 90,000 years has varied between warm and cold periods, some lasting thousands of years.

Now scientists have discovered the atmospheric transport of water from the Atlantic to the Pacific Ocean across Central America leads to relatively high levels of salinity in the North Atlantic Ocean, contributing to the formation of North Atlantic Deep Water -- an important link within the global ocean circulation.

Guillaume Leduc and colleagues at the National Center for Scientific Research, a French government-funded research organization, used a marine sediment core to reconstruct sea surface salt levels in the eastern equatorial Pacific Ocean, and detected strong fluctuations associated with the migration of the tropical Atlantic Intertropical Convergence Zone.

The researchers found during warmer phases, moisture export from the Atlantic increased, which reinforced the salt buildup in North Atlantic surface waters. The reverse situation occurred during cooler periods, with decreased fresh water flux across Panama.

The project is described in the journal *Nature*.

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