

# A New Perspective on Global Warming Hiatus

The recent global-warming hiatus has attracted considerable interests from the scientific community. Negative anomalies observed over the Northern Hemisphere continents have received wide attention as a key factor for the winter warming hiatus.

Previously, a team from the CAS Institute of Atmospheric Physics proposed that the recent frequent Eurasian extreme cold events are related to the increased quasi-stationarity and persistence of the Ural blockings associated with the warming over the Barents and Kara seas. However, the physical cause of the cold anomaly over North America as a North American component of the winter warming hiatus was still unclear.

In a recent study, the researchers found that the surface air temperature over the eastern North America and the North European has been significantly influenced by the sea ice variability over the adjacent seas around Greenland (Baffin Bay, Davis Strait and Labrador Sea, or BDL) by changing the movement of Greenland blockings.

Specifically, the westward-moving Greenland blocking events increased significantly due to the weakened mid-high latitude westerly winds over Greenland and its upstream region due to a strong sea ice decline over the BDL in the recent decade. As a result, intense cold anomalies are seen over the eastern North America. However, the less strong BDL sea ice decline was found to favor quasi-stationary Greenland blocking events so that there are strong cold anomalies



Iceberg in the Davis Strait. Credit: Craig Lee.

over the North Europe and central-eastern Asia.

The researchers concluded that the cold air outbreaks over the eastern North America should be more frequent under a strong declining condition of the BDL sea ice in the future.

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Map of the Davis Strait.