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An analysis of the impact of blocking on North American summers

The summer of 2004 in the central part of North America was unusually cool. During August, temperatures were 5o – 7o F cooler than normal across most of Missouri, and in Columbia this was the third coolest summer since 1889. The cool summer can be linked directly to unusually strong and persistent blocking in the East Pacific and Alaskan Sector. Conversely, blocking was also responsible for the devastating summer heat waves in Eurasia during the summers of 2002, and, especially, 2003. In North America, historically cooler and/or wetter summers can be linked to unusual summer blocking activity over the East Pacific region. However, there is little to suggest that these events are related to interannual variations such as the El Nino and Southern Oscillation. Thus, the role of blocking plays a larger role in influencing summer season temperature and precipitation regimes than sea surface temperature anomalies.