



The Relationship Between Recent Arctic Amplification and Extreme Mid-Latitude Weather

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The Arctic has warmed more than twice as fast as the global average and is referred to as Arctic amplification. The rapid Arctic warming has contributed to dramatic melting of Arctic sea ice and spring snow cover, at a pace greater than simulated by the climate models. These profound changes to the Arctic system have coincided with a period of ostensibly more frequent events of extreme weather across the Northern Hemisphere (NH) mid-latitudes, including recent severe winters. The possible link between Arctic change and mid-latitude weather can be broadly grouped under three potential dynamical mechanisms—changes in: storm tracks, the jet stream and planetary-waves and their associated energy propagation. I will discuss how less sea ice and increase snow cover separately can force more severe winter weather across the NH continents. I will conclude with a new idea for how it is possible for sea ice and snow cover to jointly influence mid-latitude weather.