

The Impact of the Madden-Julian Oscillation on High-Latitude Winter Blocking during El Niño-Southern Oscillation Events

Stephanie A. Henderson, Eric D. Maloney

Journal of Climate, July 2018, American Meteorological Society

DOI: 10.1175/jcli-d-17-0721.1

The impact of the MJO on persistent high-pressure systems during El Niño and La Niña events

What is it about?

Persistent high pressure systems, known as atmospheric blocks, are associated with weather extremes such as drought, heat waves, flooding, and sudden long-lasting cold snaps throughout much of the world. Understanding what impacts blocking can help us to better predict it. In a previous paper, we found that an important form of weekly tropical variability known as the Madden-Julian Oscillation (MJO) significantly impacts blocking, at times associated with a doubling in how often blocks occur. In this paper, we find that these MJO impacts depend on the state of El Niño and La Niña. Significant MJO impacts include up to a tripling in how often Atlantic blocks occur during El Niño events relative to the average.

Why is it important?

Given the strong link between blocking and persistent weather extremes, understanding what impacts blocking can improve the predictability of long-lasting weather extremes. Our study found that there is a significant impact of the MJO on blocking, and that these impacts depend on El Niño and La Niña. This suggests that the predictability of blocking may be improved by simultaneously considering the MJO and El Niño/La Niña.

Perspectives



Stephanie Henderson (Author)
University of Wisconsin - Madison

The MJO varies in weekly timescales, while El Niño and La Niña can persist for several months. My hope is that this paper demonstrates how weather and climate interact across different timescales. Multi-timescale interactions are important to consider to understand global weather and climate as well as to improve predictions.

[Read Publication](#)

The following have contributed to this page: Stephanie Henderson



PDF generated on 23-Jul-2018
Create your own PDF summaries at www.growkudos.com.



In partnership with:

