

## **Exploring Derecho Occurrence and Climate Variability**

Kacie Nicole Shourd and Michael L. Kaplan

Derechos are considered to be weakly-forced, “warm-season” severe weather events. As such, 139 derecho events were identified during the eleven warm seasons from 2012-2022 for evaluation against a variety of climate indices. The correlations between derecho occurrence during each warm season and these climate indices were then calculated. A number of studies have been conducted in attempts to link tornado and hail occurrence with larger-scale climate variability, but no such study (to the author’s knowledge) has been conducted with respect to derechos and climate indices. This work aims to fill that knowledge gap and gain insight into anticipating derecho occurrence on a seasonal basis. The results of this research reveal a correlation between ENSO and derecho occurrence, suggesting that Oceanic Niño Index and, to some extent, the Trans-Niño Index, may be useful in seasonal derecho forecasts.