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**Deriving Data-driven Insights from Climate Extreme Indices for the Continental US**

*Xinbo Huang<sup>1</sup>, David Sathiaraj<sup>1,2</sup>, Lei Wang<sup>2</sup>, and Barry D Keim<sup>2</sup>*

<sup>1</sup>NOAA Southern Regional Climate Center, Louisiana State University, Baton Rouge, Louisiana, USA

<sup>2</sup>Department of Geography & Anthropology, Louisiana State University, Baton Rouge, Louisiana, USA

Daily climate data observations from more than 3000 climate measurement sites in the continental U.S. were mined and analyzed to derive insights and trends from climate extreme indices. Daily climate data observations were aggregated by climate divisions and analyzed to derive a new climate extremes indices data set (Threshold Exceedence Frequency, TEF). Each climate division was statistically assessed for the following elements: maximum and minimum temperature, precipitation and snowfall. The climate data time series were divided into 2 time intervals (1946–1980 and 1981–2015) and the occurrence frequencies of various climate extreme indices was statistically examined. Results revealed interesting insights such as an increasing frequency of occurrence of night-time temperatures in Southeast US and decreasing frequency of winter temperature and snowfall extremes in northern US. The study also produced a new web-based visualization system to analyze the results of the study. The visualization system included interactive choropleth maps and charts to depict spatiotemporal changes in various climate thresholds over time.