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## **Predicting the Unique Lightning Climatology of Central Arizona**

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### **Abstract**

Lightning is a worldwide phenomena, but few locations on earth share the same unique characteristics as those found in Arizona. Namely, lightning density and frequency is highly seasonal and peaks during the North American Monsoon. Within the NAM area, local patterns emerge which deviate from the broader area. In particular, lightning patterns across central Arizona (including the Phoenix Metropolitan Area) are atypical compared to the rest of the region. While past academic and operational studies have identified these patterns, there remains a disconnect in using the patterns in a predictable manner. This presentation will discuss central Arizona lightning patterns, threats posed by the lightning, efforts to use communicate lightning data in an operational setting, and attempts to use machine learning processes to enhance real-time prediction of future lightning activity.

### **Topic Areas**

Meteorology: Numerical Modeling and Nowcasting, Lightning Climatology

### **Submission Format**

Poster