281 Lightning Impacts on College Football Games

Ronald L. Holle¹, Katie Walsh Flanagan² and William A. Brooks¹
¹Vaisala, Inc., Tucson, Arizona
²East Carolina University, Greenville, North Carolina

MOTIVATION
- Lightning safety policies influence all types of sports, especially football in the United States
- The football season overlaps the latter portion of the annual lightning cycle across the country
- This study evaluates lightning impacts on college football games
- The University of Idaho received $975,000 for a game cancelled by lightning at the University of Florida on 30 August 2014
- Lightning considerations now impact all outdoor sports worldwide
- This study examines the lightning context of games that are affected
- No prior objective review of lightning effects on multiple games has been performed with lightning data

DATA
- Use cloud-to-ground (CG) and in-cloud (IC) data from the NLDN around the locations and times of college football games impacted by lightning
- Evaluate lightning activity relative to 136 football games during autumn in the United States from 2010 through 2017
- Exact external clock times are determined from media reports or interpolated from other information about progress of game
- Lightning considerations now impact all outdoor sports worldwide
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METHOD
- Composite data from the National Lightning Detection Network (NLDN) around the locations and times of college football games impacted by lightning
- Evaluate lightning activity relative to 136 football games during autumn in the United States from 2010 through 2017
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AUTUMN 2018 U.S. SPORTS IMPACTED BY LIGHTNING
- 66 In-game delays 61 NFL
- 34 Started late 30 4
- 17 Very little or no lightning 16 1
- 22 Large amount of lightning before, during, and after game 20 2
- 33 V shape for steadily-moving storms 31 2
- 15曖昧な状況または結果 13 2

5 CATEGORIES OF LIGHTNING IMPACTS

SUMMARY
- Affected most often in early September
- Affected most often in midday/early evening
- Mostly in Texas, Florida, and Midwest
- Delays ranged from 21 to 346 minutes
- Many games are well managed, but a large variation in responses to lightning
- Colleges and coaches should provide documentation of the decision process for lightning delays to understand better whether optimal approaches are being used effectively and consistently

Types of storms
- V shape for steadily-moving storms
- Large amount of lightning before, during, and after game
- Medium amount of lightning
- Small amount of lightning
- Very little or no lightning

REFERENCE