Database Design for the Evaluation of On-shore and Off-shore Storm Characteristics over East Central Florida

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- Database to The KSC Lightning Research Database (KLRD) was created to investigate lightning characteristics over differing terrain as well as reduce manual data entry time and combine information from various data sources into a single record for unique lightning events of interest.

- The KLRD contains data from over 170 unique storms (January – September 2014) and provides the following capabilities:
  - Imports data from a lightning detection network and identifies and records lighting events of interest.
  - Imports data from NASA Buoys 41009 and 41010 and the KSC Electric Field Mill network, then matches these electric field mill values to the corresponding lightning events.
  - Calculates distances between each lightning event and the various electric field mills.
  - Aids in identifying the location type for each stroke and provides statistics on the number of strokes per flash.
  - Allows for customized searches and reports.

Major Findings to Date

1. The largest positive and negative I_p in the samples to date originate over the ocean.
2. Higher E-fields occur over ocean during active lightning as compared to on-shore E-fields using the same criteria.
3. No statistical difference was found for polarity by terrain.
4. No statistical difference was found for multiplicity by terrain.

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