

# TASK 397. Measurements of Thunderstorm Electrical Parameters For Improvement of the Lightning Flight Commit Criteria

## PROJECT AT-A-GLANCE

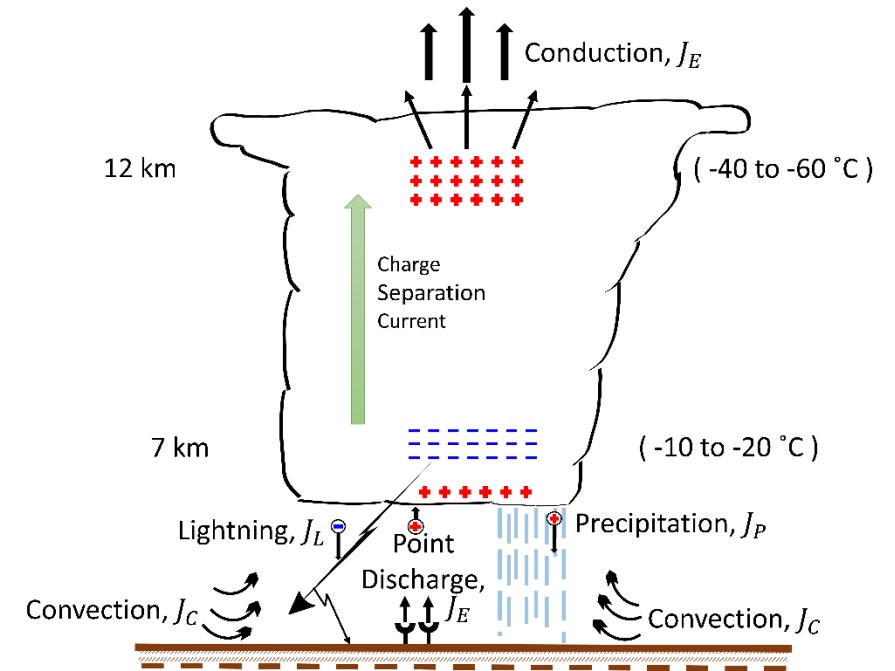
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## RELEVANCE TO COMMERCIAL SPACE INDUSTRY

- One way to minimize launch costs is to reduce the uncertainty associated with the cloud rules that protect a launch vehicle by preventing its interaction with natural lightning or a lightning strike triggered by the vehicle during a launch.
- These cloud rules are known as the Lightning Launch Commit Criteria (LLCC) or the Lightning Flight Commit Criteria (LFCC).
- The goal is to lessen the percentage of launch delays and scrubs associated with the LLCC/LFCC, without compromising safety, thus promoting the commercial launch sector.

## STATEMENT OF WORK

- Measure Maxwell currents and electric field changes associated with initial cloud electrification.
- Identify/examine signatures of cloud-charge separation.
- Make suggestions on possible ways to refine cloud rules in the LFCC.



## STATUS

- Analyzed Maxwell current, electric field, and lightning datasets.
- Identified thunderstorm conditions in which Maxwell current measurements provided additional information.

## FUTURE WORK

- In future projects, more such cases need to be analyzed to determine the statistical consistency of results.