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## **DEMETER Observations of Lightning-induced Electron Precipitation Bursts in the Vicinity of the South Atlantic Anomaly**

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Previous in-situ observations of lightning-induced electron precipitation (LEP) bursts were believed to be limited to the regions over Europe, in view of the much lower background (ambient) energetic electron population levels to the east of the South Atlantic Anomaly (SAA). With its sensitive electron detector oriented perpendicular to the orbital plane, DEMETER satellite generally observes a much higher background of energetic electron flux at longitudes immediately west of SAA, for example over the continental United States. The transient LEP bursts produced by individual lightning discharges are thus buried in the midst of this background, and are normally not detectable, even when ground-based observations (via the subionospheric VLF method) clearly indicate the presence of LEP bursts. However, careful examination of DEMETER passages over highly active thunderstorms, within which there exist many tens of flashes per second, have recently revealed the presence of detectable LEP bursts, especially near the western edge of the SAA. In addition, DEMETER data indicates the presence of particular electron energy spectral formations that are repeatable from day to day, and which may be imposed by persistent and ongoing lightning activity (i.e., as result of the cumulative effect of many successive lightning discharges).