2011 Workshop: Transient Luminous Events and TGFs

Long title
Lightning Effects on the Upper Atmosphere
Conveners
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Mike Taylor
Description

This workshop will cover all aspects of coupling between lightning and the ionosphere/thermosphere/mesosphere system. Results from observational, theoretical and modeling studies regarding the energetic coupling of lightning activities with the upper atmosphere will be presented and discussed. Contributions on sprites, jets, elves, terrestrial gamma ray flashes, and related electromagnetic effects are welcome, as are those on related topics, such as the local and global effects of these processes, the characteristics of lightning responsible for these phenomena, and other related nonlinear electromagnetic wave/ionosphere interactions. We are also interested in developments of new observational instruments and remote sensing techniques as well as future observation campaigns. The workshop will be consisting of scheduled short presentations. Students are strongly encouraged to contribute to this workshop.

Agenda

Robert Marshall (Invited): Numerical Modeling of Lightning-Ionosphere Interactions (pdf)

Jianqi Qin: Impact of mesospheric ion conductivity variations on the initiation of long-delayed sprites (pdf)

Burcu Kosar: Sprite Streamer Formation in Under-Voltage Conditions (pdf)

Sotirios Mallios: Charge transfer to the ionosphere and to the ground during thunderstorms (pdf)

Caitano Luiz da Silva: Influence of the charge moment change on sprite initiation altitude (pdf)

Jeremy Riousset (invited): Air-density-dependent model for analysis of air heating associated with streamers, leaders, and transient luminous events (pdf)

Samaneh Sadighi: Streamer Discharges from Isolated Hydrometeors in Thunderclouds (pdf)

Wei Xu: Monte Carlo Simulation of Terrestrial Gamma-ray Flashes (pdf)

Fernando Simoes: Low Frequency Wave Measurements Onboard C/NOFS During the 2008-2009 Solar Minimum (pdf)

Justification

The workshop is justified/motivated by recent new development on studies of the coupling between the lower and upper atmospheres through thunderstorm/lightning related processes.

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