

SYNOPTIC AND THERMODYNAMIC CHARACTERIZATION OF SPRITE PRODUCING CONVECTIVE SYSTEMS OBSERVED IN 2012 DURING THE “CHUVA SUL” CAMPAIGN

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ABSTRACT

Sprites are a class of Transient Luminous Events - TLEs that occur above the storms. They are a consequence of intense transient electric fields resulting from the removal of large quantities of electrical charge from thunderstorms by lightning, predominantly by Cloud-Ground (CG) discharges. The existence of TLEs discloses the electrodynamical coupling between various atmospheric layers, including ionized regions, i.e the ionosphere and magnetosphere.

During the CHUVA campaign in the South of Brazil, in November and December 2012, we performed observations of sprites, the main type of TLE, from an observation site near Fraiburgo in the interior of Santa Catarina State. We captured 17 sprites above two Convective Systems on November 19 and December 11. This paper will present a synoptic characterization of the factors that may have originated these systems that generated sprites using reanalysis data, satellite images, and a thermodynamic analysis.