

## Physical properties of sprite-producing MCS

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Transient Luminous Events (TLEs) are light emissions that occur in middle and upper atmosphere and are associated with thunderstorms with high electrical activity. These events are luminous emissions generated by electric fields produced by lightning. Sprites, Halos, Jets and Elves are the most common phenomena known as TLEs. The most well-known and well-documented of these events are the sprites. Sprite optical emissions, which extend from ~40 to 90 km, are associated with thunderstorms with high electrical activity, especially with the occurrence of positive cloud-to-ground lightning (CG). Since its discovery (~ 20 years), several studies have been conducted to better understand this phenomenon. In February and March 2006 a campaign was held to observe TLEs from the Southern Space Observatory/ INPE (29.4 ° S, 53.8 ° W), São Martinho da Serra, Rio Grande do Sul (Brazil). In this campaign 94 sprites were observed over a storm in Paraguay on the night of 04/03/2006 between 01:40:13 UTC and 05:27:47 UTC using two Xybion (ICCD) cameras for filming of the events. The main goal of this work is investigate occurrence of sprites in relation with the physical properties of the MCS using data from Forecast and Tracking of Active Convective Cells (ForTraCC) model.