



## **Characteristics of Mesoscale Convective Systems in Africa derived from satellite Infrared and continuous lighting observations**

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This paper aims to characterize the thunderstorms observed in the African Continent through the relation between cloud-to-ground lightning strokes with the time development stages of the convective systems observed during August-December of 2004. In order to depict the main structures of the thunderstorms observed during the mentioned period, we used an algorithm that computes the morphology of the convective systems (CS), and it tracks them with time. This algorithm is known as FORTRACC and uses infrared images of GOES satellite. In addition to the life stage of the CS, we used sferics measurements from the ZEUS LONG RANGE LIGHTNING MONITORING system. The lightning frequency and its temporal evolution over CS might be used to evaluate the phase stage and process of development of these systems. The results computed over the Amazon region showed that: a) Thunderstorms (CS with lightning) present a higher growth ratio (area expansion with time) during its initial development than storms without lightning; b) Only the large CS presented lightning; and c) Small CSs are the ones that have higher lightning frequency per area, while the large CSs have the highest growth ratios. These results will be compared with the ones found over Africa to depict the main thunderstorm characteristics.