A comparison of the hail size in front of the electrical and other radar features of thunderstorms: the use of lightning jump as severe weather forecaster.

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Characteristics of study

Period of study: 2006-2013

Number of cases: 139 episodes

Distribution according to the size of hail

- G1: 77 episodes (≤ 2 cm)
- G2: 51 episodes (2–4 cm)
- G3: 11 episodes (>4 cm)

Evolution of lightning and area parameters

Rate of Total Lightning / minute

Which type of lightning is the dominating?

- IC / Total Lightning

G1 - CG dominate during all period, especially in the last minute.

G2 & G3 - CG dominate during the first minutes. From minute 4, there is an increase of +CG.

Radar parameters

Profile of reflectivity

- FUNNEL shape
- TILTED shape
- BOWED shape

Area of study

Although all groups show abrupt increase at the last minute, G3 shows the highest minutes.

IC flashes dominate in total lightning in the 3 groups

CG flashes only are 20% in G1 and G3. In G2, they represent 10%.

How is the behavior of CG flashes?

Are there positive anomalies?

CG / CG

The evolution of reflectivity / height shows variation according to different group.

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References