Numerical Simulations with the Inductive Mechanisms using some published Data

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There are a lot of laboratory experiments in the last 10-15 years dealing with thunderstorm elecrification processes. One of the most important result is the laboratory evidences of the main role which play the non-inductive mechanisms in the thundercloud charging processes and especially in the the primary stage estabiliging enough electrical charges to provoke the first lightning stroke. Futher laboratory studies in UMIST (Brooks and Saunders 1994) have shown that the experimental results are broadly in line with the predictions of the inductive theory, as presented by Mason [1988], although it seems likely that he may have overestimated the number of droplets that rebound from the rimer. It seems more likely that the inductive mechanisms acts as a contributory mechanism in the later stages of electrification although there is disagreement between thundercloud models which include it in this capacity [*Dye et al.,1986;Heldson and Farley, 1987;Ziegler et al., 1991].* . According to Brooks and Saunders [1994] the significance of the mechanism to thunderstorm electrification is still open to question and further is argued that a better understanding of the detailed nature of droplet-graupel interactions in clouds is required in order to assess properly the contribution of the inductive mechanism to cloud electrification.

Having in mind the importance of of the 2-mm diameter graupel particles and cloud droplets contents, it has been calculated the expected lightning frequences on a base of the inductive mechanism.