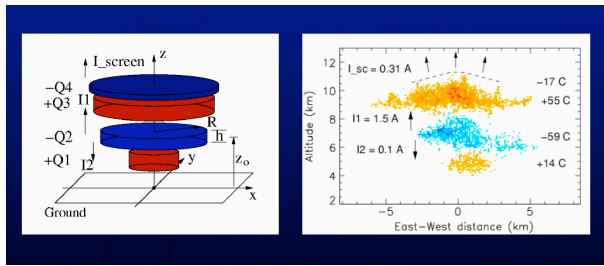


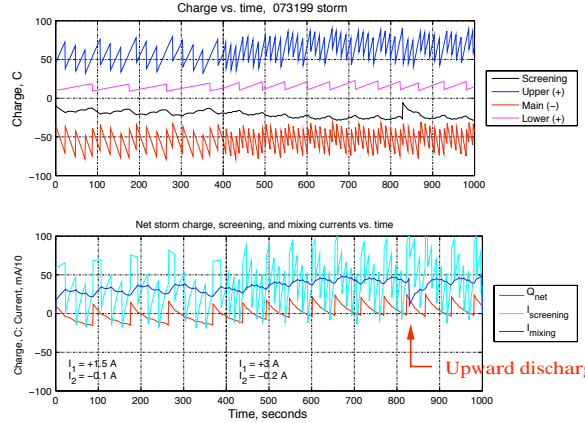
Upward Discharges from Thunderstorms – Additional Figures

Krehbiel, Riousset, et al., Fall 2007 AGU Meeting

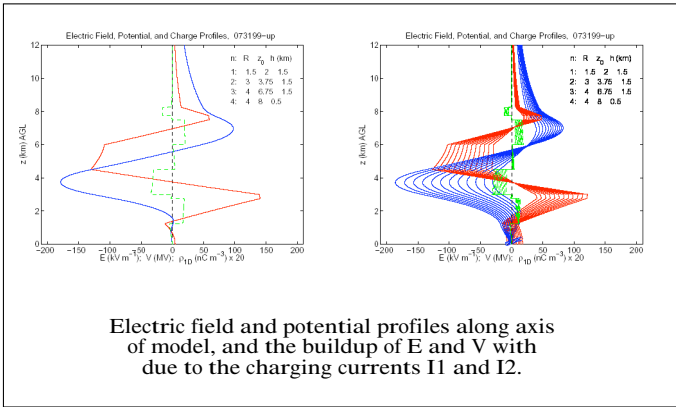


Cylindrical disk charge model

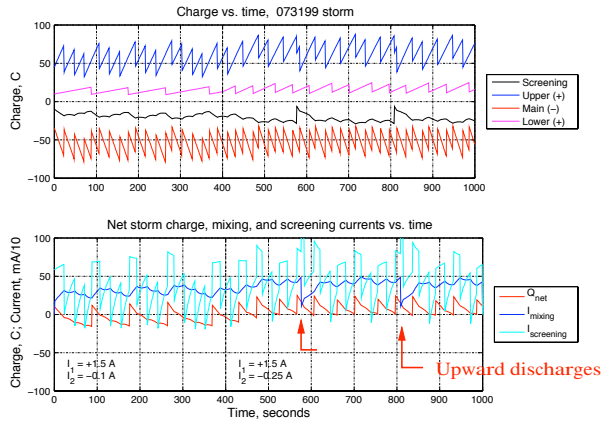
Lightning-inferred charge structure, July 31, 1999 storm
Langmuir Laboratory



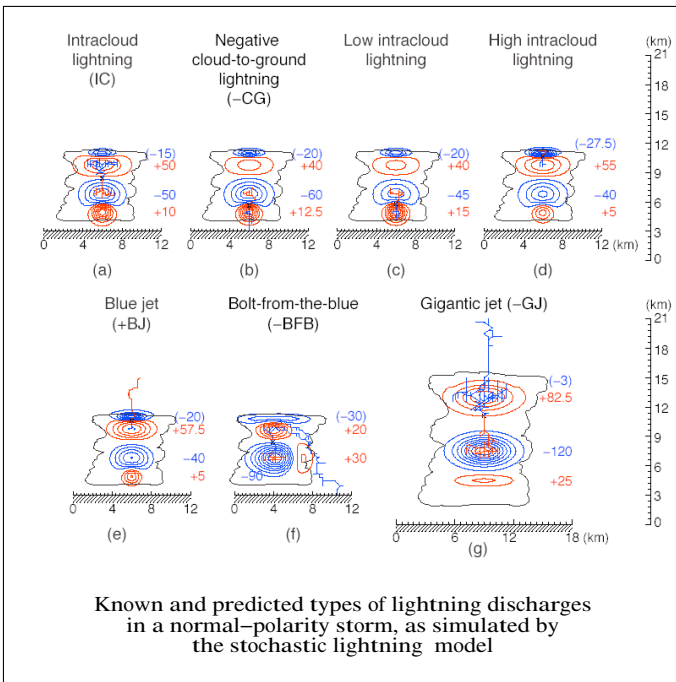
Charge and current values vs. time, showing the occurrence of an upper-level discharge after the charging currents are doubled in the storm. The discharge followed a -CG flash that increased the net positive charge in the storm.



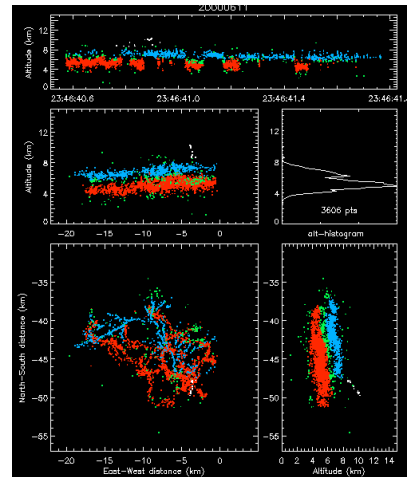
Electric field and potential profiles along axis of model, and the buildup of E and V with due to the charging currents $I1$ and $I2$.



Same as above, except only the lower + charging current increased, increasing the -CG flashing rate while leaving the IC rate the same. The increased -CG rate causes the storm to develop a net positive overall charge that promotes the initiation of upward discharges.



Known and predicted types of lightning discharges in a normal-polarity storm, as simulated by the stochastic lightning model



Second upward negative jet in the storm of June 11-12, STEPS 2000. Same as the jet at 0025:18, except initiated *during* the parent discharge (an inverted polarity IC flash) rather than after a delay.