

Calculating HF and VHF emissions from Compact Intracloud Discharges

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Compact Intracloud Discharges (CIDs) are powerful radio emitters in the HF – VHF range. They have rapid (~ 1 microsecond) onsets, usually without any detectable discharge activity beforehand, and often appear as isolated events within the thunderstorms. The VLF-LF sferics that are usually associated with CIDs are called narrow bipolar events (NBEs). It has been suggested that the HF – VHF radio emissions from CIDs are the result of streamer breakdown processes, either in the form of corona flashes from leader tips or by a new process called fast positive breakdown. In this talk, we shall model the HF – VHF radio emissions as a network of accelerating and branching streamers and compare our calculations with CID observations.