

E1-214: Some characteristics of cloud to ground lightning obtained with lightning direction finding systems in Sri Lanka

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Some characteristics of lightning ground flashes observed in Sri Lanka by two lightning direction finding (DF) systems are presented in this paper. The average number of strokes per flash observed in this study was 2.85. The average duration between successive strokes (inter-stroke duration) varied from 7 ms to 1.02 s with an average of 123 ms. The cases with long inter-stroke duration could be a result of misidentification of other ground flashes in close proximity as subsequent return strokes by the DF system. The most frequent inter-stroke duration was between 40 and 60 ms. The ratio of first return stroke amplitude to that of subsequent return strokes varied from 0.04 to 15 with a mean value of 0.68. Fifteen percent of subsequent return strokes showed larger amplitude than the first return stroke. The observed mean first return stroke current normalized to 100 km is 36 kA, while that of subsequent return strokes is 21 kA. The maximum first return stroke current normalized to 100 km observed in this study was 290 kA while the observed maximum subsequent return stroke current was 140 kA. The average current of 1st, 2nd, 3rd, 4th and 5th subsequent return strokes normalized to 100 km observed in this study were 23 kA, 21 kA, 20 kA, 20 kA, and 16 kA respectively.

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