ON THE NATURE OF TROPICAL LIGHTNING OBSERVED IN SRI LANKA - II.

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Radiation fields from distant negative-ground-flashes occurring about 100-200 km away were observed using a flat plate antenna connected to a 20 MHz storage oscilloscope. Lightning from five thunderstorms detected over both sea and land were analysed. The number of strokes per flash varies from 1 to 11 with a mean of 2.46 and standard deviation 1.85. About 45 per cent of the flashes observed are of single stroke type. The interstroke time interval behaves log-normally with a mean of 96 ms and standard deviation 95 ms. The average zero crossing time for 423 first return strokes observed is 88us, whereas that of the 228 subsequent strokes is 65 us. The individual statistical distributions of the first return stroke zero crossing times of the five thunderstorms (occurred in four consecutive days) indicate the means of 45, 65, 71, 80 and 100us with standard deviations 22, 16, 28, 24 and 47us, respectively. By analysing these thunderstorms according to their place of origin, it is shown that lightning parameters vary greatly depending on the prevailing meteorological and topographical origin of each and every thunderstorm. Thereby, it is suggested that a classification of lightning parameters according to the climatological zones of the world could be more realistic than the unsuccessful attempts that have been made to classify them according to the geographical latitude.

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