E1-07: Some features of lightning ground flash activities observed in tropical thunderstorms

AB Weerasekara¹, IMK Fernando¹, DUJ Sonnadara¹, R Lelwala¹, KPSC Jayaratne¹, S Namasivayam², KRA Bandara³, C Gomes¹ and TR Ariyaratna¹

Some features of lightning ground flash activities in tropical thunderstorms (Sri Lanka) were studied with information provided by two lightning direction finding (DF) stations installed at Colombo (79.84 E, 6.93 N) and Ratnapura (80.43 E, 6.64 N). A total of 980 lightning ground flashes recorded in February 1999 during the inter-monsoon period were used in this analysis. The striking rate of ground flashes per hour was found to be varying from 7 to 134 with the mean of 61. The mean number of strokes per flash for negative and positive ground flashes was 3.0 and 1.2 respectively. 73% of negative ground flashes had more than one stroke per flash whereas 8.2% of positive ground flashes had more than one stroke per flash. The percentage of positive ground flashes is 6.2% of the total number of flashes.

Financial assistance by IPPS, Uppsala University, Sweden for research grant number SRI:01/1, NSF grant number RG/99/P/02 and University of Colombo grant number 99/S/31 are acknowledged.

¹Department of Physics, University of Colombo

²Electro-Technology Unit of Industrial Technology Institute

³Department of Meteorology