

Monitoring for lightning activities and thunder cloud developments over the Tokyo metropolitan area based on electrostatic field and electromagnetic measurements

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To monitor lightning activities and development of thunder cloud, electromagnetic and electrostatic field measurements were conducted over the Tokyo metropolitan area during the summer season in 2016 and 2017.

In 2016, we observed atmospheric electrostatic field with an electric field monitor (BOLTEK ELF-100) at Hino campus of Tokyo Metropolitan University during August-September. Lightning activities were measured with ELV-VLF band radio observation system at 4 sites in the metropolitan area. The worldwide lightning location network (WWLLN) data was also used to indicate temporal and spatial variations of lightning over the area and the climatological characteristics

Obtained results show clear intra-seasonal variations of lightning activities in 2016. One of the most frequent lightning events were observed in August 18 with the passage of a frontal system over the Kanto area. The electrostatic field measurement at Hino shows clear relationship between electric field variations and thundercloud developments. We will introduce observational results more detail in the presentation.

This work was partly supported by Japan Science and Technology Agency (JST) and Japan International Cooperation Agency (JICA) under SATREPS

Keywords: Lightning, Heavy rainfall