Lighting-induced bremsstrahlung X-rays observed near the leader.

*Shusaku Takahashi¹, Masashi Kamogawa¹, Gregory Bowers ², David Smith², Daohong Wang³

1. Department of Physics, Tokyo Gakugei University, 2. University of California, Santa Cruz, 3. University of Gifu

Energetic radiation, bremsstrahlung X ray in energy range of gamma ray, associated with lightning activities and thunderstorm have been reported. The lifetime of lightning-generated X rays, termed short burst, is in the order of millisecond. These X rays are considered to be generated by bremsstrahlung along the leader, termed short burst. During the winter, the bright short burst with more than 100 millisecond duration was detected on 4 Dec. 2015. In this analysis, we compare radiation data with VLF lightning location data and high speed camera data.

Keywords: Energetic radiation, Winter Lightning, Thunderstorm