

Development of a Lightning Location System

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We develop a system to locate lightning sources by observing VLF spherics at a single site. The developed location system has a crossed loop antenna to receive two horizontal magnetic components and a dipole antenna to receive a vertical electric component. Spherics propagate while reflected at the boundaries of the Earth-ionosphere waveguide, and that causes a sequence of pulses appear on the waveform. The distance is calculated from the difference in arrival times of the pulses. On the other hand, the direction is fixed from the amplitudes of first pulses of two magnetic component with the polarity of the electric component. By using the many observed spheric data, we will discuss the performance of the developed system.