

Observations of upward lightning-induced ELF transients at Syowa Station, Antarctica

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Continuous monitoring of ELF waveforms have been carried out at Syowa station (69.0S, 39.9E), Antarctica since February 2000. The observation system consists of X and Y search coil sensors with a flat response in the frequency range 1-500 Hz, a 16-bit A/D converter with a 1000-Hz sampling rate, and a digital recorder. During the STEPS campaign carried out over the High Plains in the United States from May 22 to July 15, 2000, many sprite events were observed at Yucca Ridge Field Station (40.7N, 104.9W), Colorado. Synchronized with these sprite events, ELF transients were observed at Syowa station. Based on the observed characteristics of ELF waves, we will investigate the generation and global propagation mechanisms of upward lightning-induced ELF waves.