Sprite thunder: automated sprite detection with infrasound recordings

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Recent work by T. Farges et al.[1] shows how sprites generate an infrasound signature. This signature is a chirp in the frequency range 1-10 Hz, which has been observed for 70% of the sprite events, as confirmed with optical observations from the "Observatoire du Pic du Midi" in the Pyrenees (southern France). This promising high detection efficiency makes infrasound recordings highly relevant for sprite detection. In this work, we compare the traditional tools of Fourier analysis with the wavelet analysis [2] and a complex system approach [3] to investigate the properties of the sprite induced chirp, and try to determine the false alarm rate. We then discuss how the results can be used to successfully detect sprites with infrasound recordings.

