Geophysical Research Abstracts
Vol. 12, EGU2010-9662, 2010
EGU General Assembly 2010

Comparison of different source location methods for ELF transients by using the parent lightning discharges with known positions

Yasuhide Hobara, Takashi Nakamura, Minako Sekiguchi, and Masashi hayakawa
The University of Electro-Communications, Tokyo, Japan (hobara@ee.uec.ac.jp)

Global lightning distribution can be accomplished by using ELF transients, in which the source location technique by a single station observation is of essential importance. Different kinds of methods so far proposed have been compared. As for the azimuth determination, the Lissajous method and goniometer are equally acceptable. On the other hand, there exist a lot of differences in the distance determination. Based on FFT analysis, the method by Jones and Kemp is found to be the best among many by using the lightning discharges in Hungary. Also, we strongly recommend the use of wavelet analysis in order to increase the accuracy.