Improving accuracy of locations and lightning charge moment changes using multi-point simultaneous observations of ELF transients

*Ryou Murai[1], Yasuhide Hobara[1,2,3], Junpei Yamashita[4], S. Heckman[5]

1. Department of Computer and Network Engineering, The University of Electro-Communications, Tokyo, Japan., 2. Earth Environment Research Station, The University of Electro-Communications, Tokyo, Japan., 3. Center for Space Science and Radio Engineering, The University of Electro-Communications, Tokyo, Japan., 4. Univercity of Electro-Communications, 5. EarthNetworks,USA

In this study, we simultaneously observed ELF transients at Rikubetsu, Hokkaido and Tarumizu, Kagoshima prefecture. Source locations of lightning discharges were derived by using the triangulation technique. We compared these estimated lightning locations with those from Japan total lightning network.
Moreover, we derived corresponding charge moment changes (CMCs) by current moment waveforms integrated over time.

Keywords: ELF band sferics, Location of lightning discharges, Charge moment changes

