Data from the paper (paper ID 2018GL077102) titled as "Very High Frequency Radio Emissions Associated with the Production of Terrestrial Gamma-ray Flashes" authored by Fanchao Lyu, Steve A. Cummer, Paul R. Krehbiel, William Rison, Michael S. Briggs, Eric Cramer, Oliver Roberts and Matthew Stanbro

Description: The archived data contains all the data that used in the three figures.

1. Data in "DatainFigure1_Geolocations.mat":

This file contains the geolocation of the four ground-based LF sensors (Duke, FIT, Miss, PR), the two LMA centers (KSCLMA, HSTNLMA), the Fermi position and NLDN event location for three TGF events (TGF150904891, TGF160917637a and TGF160917637b)

2. Data in "DatainFigure2_TGF150904891.mat"

This file contains the LF magnetic field waveform, and the lightning mapping array data that used in figure 2. Basically, the variables can be identified from the name of them.

"Figure2a_LF_Bphi_Duke" saves the vector for the uncalibrated LF magnetic data from Duke LF sensor, while "Figure2a_LF_Bphi_Duke_TimeShiftedback" saves the time vector of Duke LF magnetic data. Similarly, the LF data and time vector from FIT and Miss LF sensor can be identified from the name of the variables.

"Figure2a_LMAsourcePowerin1ms" and "Figure2a_LMAsourcePowerin1ms_Time" are the source power and time of the LMA sources that plotted in Figure 2a.

"Figure2b_LMAsource_X" and "Figure2b_LMAsource_Y" are the location of the reliable LMA sources that in Figure 2b.

"Figure2b_LMAsource_X_unReliable" and "Figure2b_LMAsource_Y_unReliable" are the location of the unreliable LMA sources in Figure 2b. "Figure2b_NLDNevent_X" and "Figure2b_NLDNevent_Y" are the location of NLDN events reported during this TGF-associated lightning flash.

"Figure2c_LMAsource_Reliable_Height",

"Figure2c_LMAsource_Reliable_Power" and "Figure2c_LMAsource_Reliable_Time" are the height, power and time of the LMA sources located by KSC LMA during this TGF-associated lightning flash and plotted in Figure 2c.

"Figure2c_LMAsource_unReliable_Height",

"Figure2c_LMAsource_unReliable_Power" and

"Figure2c_LMAsource_unReliable_Time" are the height, power and time of the unreliable LMA sources located by KSC LMA during this TGF-associated lightning flash and plotted in Figure 2c.

 Data in "DatainFigure3_TGF160917637a.mat" and "DatainFigure3_TGF160917637b.mat"

From the name of the variables in these two files, they have basically the same format as that in "DatainFigure2_TGF150904891.mat", but they are for the "TGF160917637a" and "TGF160917637a", respectively. Please refer to the number 2 for more details.

Please also contact <u>cummer@duke.edu</u> or <u>fanchao.lyu@duke.edu</u> if you have any questions.