

Interactive comment on “Geomagnetic Conjugate Observations of Ionospheric Disturbances in response to North Korea Underground Nuclear Explosion on 3 September 2017” by Yi Liu et al.

Anonymous Referee #3

Received and published: 21 December 2018

Paper by Liu et al. “Geomagnetic. . .” promises to be an interesting and important study. However, in the current form the presentation of observational results is not convincing.

Authors discussed the magnitude of expected electric field disturbance about 11 mV/m (p. 9). How this estimate was obtained? It would be better to discuss the magnitude and waveform of TEC disturbance, that authors had actually measured.

Fig. 1. According to this map, there are several GPS stations in the vicinity of nuclear testing ground. Why not to provide TEC data from both the conjugate point and the same hemisphere site?

Fig. 2. In this plot only the moment of TEC disturbance can be seen. However, the

[Printer-friendly version](#)

[Discussion paper](#)



waveform of TEC disturbance is not shown anywhere. Additional Figure with extended time scale is needed.

Fig. 3. The same problem with this plot. Only the moment of FAC impulse can be seen, but not its waveform. Additional Figure with extended time scale is needed. Plot for another day is not necessary.

Editorial comments: Fig. 1. Lines with geomagnetic coordinates are needed.

The reference to Ren et al. (2012) is absolutely irrelevant.

All the names in ref. at line 213 are misspelled.

Few comments concerning interpretation: Theoretical model of FAC generation at the front of the acoustic pulse has been presented in [Pokhotelov O.A., Parrot M., Pilipenko V.A., Fedorov E.N., Surkov V.V., and Gladyshev V.A., Response of the ionosphere to natural and man-made acoustic sources, *Annales Geophysicae*, 13, N11, 1197-1210, 1995; Pokhotelov O.A., Pilipenko V.A., Fedorov E.N., Stenflo L., and Shukla P.K., Induced electromagnetic turbulence in the ionosphere and the magnetosphere, *Physica Scripta*, 50, 600-605, 1994; Pokhotelov, O.A., Pilipenko V.A., and Parrot M., Strong atmospheric disturbances as a possible origin of inner zone particle diffusion, *Annales Geophysicae*, 17, 526-532, 1999].

Interactive comment on Ann. Geophys. Discuss., <https://doi.org/10.5194/angeo-2018-122>, 2018.

Printer-friendly version

Discussion paper

