地震前の電離圏擾乱を引き起こす電場の成因
Enhanced dynamo electric field as a possible cause of ionosphere disturbance before Large Earthquake

*小山 孝一郎[1,2,3]
*Koichiro Oyama[1,2,3]

1. 国立成功プラズマ宇宙科学研究所 台湾、2. 九州大学国際宇宙天気・教育センター、3. (株）アジア宇宙環境研究コンソーシアム
1. Institute of Plasma and Space Sciences,National Cheng Kung Univ., Taiwan, 2. International Ceneter for Space Weather Sudy and Education, Kyushu Univ.,, 3. CoLtd. Asia Space Environment Research Consortium, Japan

Disturbance of ionosphere before large earthquakes has been very often reported. One of the possible disturbing drivers is electric field, which explains most of the ionosphere features we reported so far. However, the origin of the electric field is still in the darkness. One idea of electric field generation exists inside earth interior (Freund et a., 2006). We propose here that the electric field is dynamo field at the height of ≈100 km, which simply intensified before earthquake; intensified eastward (westward)electric field during daytime(nighttime). This idea explains satellite data (Oyama et al.,2008; Oyama et al.,2011; Ryu et al., 2014; Ryu et al., 2016; Oyama et al.,2016; Oyama et al., 2019).

Next question on the electric field generation is the mechanism which modifies the dynamo field. We speculate that modification of E field is a result of modification of neutral wind system, which is originally caused by internal gravity waves which propagate from below. Then again next question is on the origin of the internal gravity waves. The waves might be originally caused by the ground motion, and these waves which propagate upward might interact with planetary wave, and amplified. We show several side evidence of ground motions before earthquakes.

キーワード：地震、電場、電離圏、擾乱
Keywords: Earthquake, Electric field, Ionosphere, Disturbance

