

Ionospheric disturbance in D region possibly related to pre-earthquake activities observed by the DEMETER

\*Hidetoshi Nitta<sup>1</sup>, Masashi Kamogawa<sup>1</sup>, Shoho Togo<sup>1</sup>, Jean-Jacques Berthelier<sup>2</sup>, Tetsuya Kodama<sup>3</sup>, Toshiyasu Nagao<sup>4</sup>

1.Department of Physics, Tokyo Gakugei University, 2.LATMOS, France, 3.Earth Observation Research Center, Space Applications Mission Directorate, Japan Space Exploration Agency, 4.Earthquake Prediction Research Center, Tokai University

A decrease of electric field at the 1.7 kHz, i.e., VLF electromagnetic waves, within 4 hours before neighboring earthquake (EQ) with the magnitude of more than 4.8 was statistically shown through the data set of in-situ satellite measurement according to French groups. We found that the intensity originating from the whistler waves in the frequency of more than cutoff decreased in the orbit near the epicenter. The interpretation of the intensity decrease is due to the electron density increase in D region over the epicenter.

Keywords: Earthquake, Ionosphere, DEMETER