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

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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.

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