

VHF anomalous transmission associated with earthquakes:Preliminary results in Taiwan

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VHF electromagnetic waves cannot usually propagate long distance because they penetrate through the ionosphere. They can reach far away receivers beyond the line-of-sight only when reflection and scattering due to ionospheric or atmospheric disturbances happen. According to Fujiwara et al. (Geophys. Res. Lett., 2004), appearance of anomalies in the atmosphere before earthquakes has been verified, through observation of anomalous transmission of VHF electromagnetic (EM) waves beyond line-of-sight. The cross-correlation between the earthquake occurrences and the anomalies shows that the appearance of anomalies was significantly enhanced within 5 days before earthquakes.

Preliminary observation has been done in Hualien, Taiwan, for observation of VHF anomalous transmission possibly associated with earthquakes. Taiwan is one of best place for the statistical study of EQ-related phenomena due to active seismicity. Suitable place for FM transmission observation is restricted due to FM radio station jam. In eastern Taiwan, less artificial noise may be expected because of only small city existence. Different allocation of FM radio in Taiwan and Japan contributes to less radio wave interference.

In this presentation, we would like to discuss the observation of VHF anomalous transmission associated with earthquakes in Taiwan through preliminary one-month observation on April of 2005.