

# Atmospheric anomalies observed during earthquake occurrences

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Appearance of anomalies in the atmosphere before earthquakes (EQs) has been verified, through observation of anomalous transmission of VHF electromagnetic (EM) waves beyond line-of-sight (Fujiwara and Kamogawa et al., *Geophys. Res. Lett.*, 2004). Anomalous increase of the received intensity for a few minutes - several hours on a day was identified by the previous 15-day running median and its inter-quartile range. The cross-correlation between the EQ occurrences and the anomalies shows that the appearance of anomalies was significantly enhanced within 5 days before EQs. The one-day average number of the anomaly appearance within 5 days was found 2.4 times larger than that of other days. Through the polarization measurement of the received EM waves, the anomalies were found to occur in the atmosphere.

Acknowledgments: The authors would like to thank Mr. M. Ikeda, Mr. S. Muramatsu, and Mr. Ofuruton for their help, useful comments and advice.

## References

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