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Time and space correlations of EQ-echo with epicenter of earthquake, emitting and observing stations

Takeo Moriya^{1*}, Toru Mogi¹, Haruyuki Yamashita¹

¹ISV, Hokkaido Univ.

To confirm the relationship between anomalous transmission of VHF-band radio waves and impending earthquakes, we designed a new data-collection system and have documented the anomalous VHF-band radio-wave propagation beyond the line of sight prior to earthquakes (EQ-echo) since December 2002 in Hokkaido, northern Japan. We show here relationships between path of EQ-echo and epicenter, and appearance time of EQ-echo and occurrence time of earthquake. From empirical laws between total duration time of EQ-echo and M or maximum intensity of earthquake, and paths of EQ echo from broadcasting stations to observing stations and epicentral region, to forecast large earthquake ($M > 5$) is not difficult.

Keywords: VHF scattering wave, earthquake precursor, earthquake forecasting, hokkaido