

2011年3月11日の東日本地震の前兆現象 (VLF/LF 伝搬異常と ULF 磁界強度低下) Possible precursors to the 2011 3/11 Japan earthquake: VLF/LF propagation anomaly and ULF depression anomaly

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The purpose of this paper is to present a possible precursor to the 2011 March 11 Japan earthquake. First of all, we present the results on subionospheric VLF/LF propagation anomaly (ionospheric perturbation) by means of Japan-Russia VLF network. It is found that the ionospheric perturbation is clearly detected on March 4, 5 and 6 on the propagation paths of NLK (Seattle, USA) to Japanese stations and on a path of JJI (Miyazaki, Kyushu) to Kamchatka. Next, we present the results on the ULF depression (horizontal component) on the same days, which is interpreted in terms of the absorption in the disturbed lower ionosphere of the downgoing magnetospheric Alfvén waves. These two precursors are considered to be due to the same effect of the lower ionospheric perturbation about one week before the earthquake.

キーワード: 地震電磁気, ULF 放射

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