

## 中低緯度で観測されたLF帯標準電波位相の周期とMSTIDの周期との関連性 Relationship between phase variation of LF signals and GPS-TEC variations related with MSTIDs at mid-low latitudes

大矢 浩代<sup>1\*</sup>; 西岡 未知<sup>2</sup>; 塩川 和夫<sup>3</sup>; 土屋 史紀<sup>4</sup>

OHYA, Hiroyo<sup>1\*</sup>; NISHIOKA, Michi<sup>2</sup>; SHIOKAWA, Kazuo<sup>3</sup>; TSUCHIYA, Fuminori<sup>4</sup>

<sup>1</sup> 千葉大学大学院工学研究科, <sup>2</sup> 情報通信研究機構, <sup>3</sup> 名古屋大学太陽地球環境研究所, <sup>4</sup> 東北大学大学院理学研究科惑星プラズマ・大気研究センター

<sup>1</sup>Graduate School of Engineering, Chiba University, <sup>2</sup>National Institute of Information and Communications Technology, <sup>3</sup>Solar-Terrestrial Environment Laboratory, Nagoya University, <sup>4</sup>Planetary Plasma and Atmospheric Research Center, Graduate School of Science, Tohoku University

It is known that phase of LF transmitter signals largely varies in nighttime rather than in daytime, because uniform solar ionization in daytime makes the D-region ionosphere smoother. However, the cause of the nighttime phase variations has not been revealed. In this study, we focus on the periods of the phase variations of the nighttime LF transmitter signals observed in Japan and South-east Asia. As for Japanese data, we investigated the periods of LF signals observed in 16 April, and 6 May, 2007 by wavelet analysis. The propagation path (40 kHz) of the LF signals was located at Fukushima to Kagoshima. Both on 16 April and 6 May, 2007, phase variations with a period of about 50 minute was seen at around 11:00 UT and 15:00 UT, respectively. An occurrence of medium-scale traveling ionospheric disturbances (MSTIDs) was confirmed at 15:00 UT on 6 May, 2007 from GPS Total Electron Content (TEC) data, while the MSTIDs did not occur on 16 April, 2007. In the presentation, we will discuss the periods of LF phase variations and GPS-TEC variations in more detail.