

Longitudinal structure of electron temperature and density obtained by Hinotori and Demeter satellite

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Longitudinal structure of electron density (Ne) and temperature (Te) observed by the Hinotori satellite and the DEMETER satellite was examined in this paper. Longitudinal structure of Ne and Te show a unit-correlation pattern during morning, which Local maximums of Ne and local minimums of Te appear around 90, 190, 250 and 330E except during May-September. Ne and Te observed by both satellites show a good agreement during morning from July to October nonetheless the solar activity is different. Meanwhile, longitudinal structure of Ne and Te display a positive correlation pattern during daytime in high solar activity. Fast Fourier transform analysis reveals that wave number 3 and 4 of Ne are pronounced during November-April and May-October, respectively, On the other hand, wave number 3 and 4 of Te are pronounced during October-May and July-September, respectively. These discrepancies indicate the altitude difference of wave structure.

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