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MAGDAS/CPMNで観測した赤道ジェット電流中の月潮汐効果
Lunar tide effects in the equatorial electrojet observed by MAGDAS/CPMN

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The occurrence of equatorial counter electrojet (CEJ) is a westward flow of currents in the ionospheric E-region. The occurrence of CEJ is believed to be related with the lunar tide during geomagnetic quiet days. We have analyzed ground magnetic field data obtained from MAGDAS/CPMN equatorial stations during 2007-2009, in order to study the lunar tide effects on the equatorial electrojet (EEJ). The magnetic H-component perturbation due to the lunar-tide ionospheric currents shows a semi-diurnal variation in the normal Sq. This variation is found to be synchronized with lunar phase at all equatorial stations. The amplitude of semi-diurnal variation is generically 25% as large as mean value of the EEJ, but sometimes is become larger than 10 times. The anomalous enhancement of the semi-diurnal variation is found to be related with sudden stratospheric warming (SSW) on 19-24 January 2009. When the CEJ occurs in the morning (or evening) sector, the EEJ tends to become larger in the evening (or morning) sector. Magnetic H-component variations at the equatorial stations can be used to examine the lunar effects in the equatorial electorojet, and to understand the lunar-tide ionosphere-atmosphere coupling.

キーワード: 赤道ジェット電流, カウンタージェット電流, 月潮汐, MAGDAS, 磁気赤道, 地上磁場
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