



# 演 講

## The Mid-Latitude Trough and the Plasmopause Observed by DEMETER Satellite

利用 DEMETER 衛星研究中緯度槽與電漿層頂

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**Place :** 健雄館(科四館) S4-917 教室

### 摘 要 / Abstract :

This paper concurrently investigates the mid-latitude trough and the plasmopause positions in the ionosphere by co-located measurements of the electron density, electron temperature, and whistler count probed by DEMETER (Detection of Electro-Magnetic Emissions Transmitted from Earthquake Regions) satellite in the daytime/nighttime at 1030/2230 LT during the 4-year period of 2006–2009. More than 13000 DEMETER orbits of the electron density and the electron temperature are used to search the trough position, while the same amount of the whistler count is employed to determine the plasmopause position at the satellite altitude. At nighttime, the plasmopause is more sensitive to solar activity, which moves equatorward  $1.0\text{--}1.2^\circ$  from the low to high solar activity of the study period. On the other hand, the mid-latitude trough is more sensitive to seasonal variation, which shifts poleward  $1.7\text{--}2.5^\circ$  from the Winter to Summer month in the study period. The mid-latitude trough usually appears in the poleward side of the plasmopause during the study period. Both of the mid-latitude trough and the plasmopause move equatorward during the magnetic disturbed condition. For the magnetic disturbed  $K_p \geq 6$ -, the mid-latitude trough can appear in the equatorward side of the plasmopause. At the daytime, the trough cannot be clearly allocated, while the plasmopause is observable. The daytime plasmopause mainly appears in the equatorward side of the nighttime one. Its responses to the solar activity and to the magnetic disturbed are similar to the nighttime plasmopause.

※ 歡迎聽講 ※

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