NCU-GISS 國立中央大學太空科學研究所 Graduate Institute of Space Science

專題演講

The Leading Role of Atomic Oxygen in the Collocation of Elves and Hydroxyl Nightglow in the Low-Latitude Mesosphere

Speaker： **Dr. Yen-Jung (Joanne) Wu**

Department of Physics, National Cheng Kung University

Time： 106 年 3 月 3 日 星期五 14:00

Place： 健雄館(科四館) S4-811 教室

摘 要/Abstract：

The elve is the dominant type of Transient Luminous Event (TLE) at the base of the E-region ionosphere. The hydroxyl nightglow (OH* nightglow hereafter) has been reported at a similar altitude. The statistical studies shows that 91% of the 291 limb elves are located within +/- 5 km of the altitude of the brightest OH* nightglow emission and both elves and OH* nightglow show the semiannual oscillation (SAO) at low latitude. The physical reasons for the collocation of elves and OH* nightglow is a main focus of attention. A model for elves emission with the environmental-adapted electron density profile is tested with three density profiles of atomic oxygen (O) : the original profile from the NRLMSISE-00 model and two other profiles which are shifted 5 km upward/downward from the original. For higher altitudes of the given O density profile, the peak altitudes of the emission layers of elves is also increased. This result reveals the leading role of atomic oxygen in the collocation. Furthermore, the altitude variation of elves is compared with the VLF reflection height observed by DEMETER. The latter height not only shows the SAO similar to the elve/OH* heights, but also the difference between land and ocean. The possible relationship between VLF reflection height and elve/OH* is also discussed.

※歡迎聽講※

~請聽講者提早入座~