Japan Geoscience Union Meeting 2011
(May 22-27 2011 at Makuhari, Chiba, Japan)

PEM032-P08 Room:Convention Hall Time:May 27 10:30-13:00

Variation of Ne and Ni observed by DEMETER during 2009 total solar eclipse

Kaori Mochizuki[1*], Masashi Kamogawa[1], Yoshihiro Kakinami[2], Wang Xiaoni[3], Jean-Jacques Berthelier[3], Tatsuo Onishi[3]

[1]Dpt. of Phys., Tokyo Gakugei Univ., [2]Inst. Space Sci., National Central Univ., [3]LATMOS, France

We investigate topside ionospheric dynamics of 2009 total solar eclipse in East Asia by using Ne/Te and Ni/Ti data of French satellite DEMETER, of which altitude is around 660 km. On July 22, 2009, one of DEMETER orbits crossed eclipse zone, and the distance closest to the total eclipse area was approximately 200km. Just after the total solar eclipse, Te decreased while Ne did not change. Before the maximum obscuration, Ne decreased and Te increased because production rate of plasma decreased under the F-region. Since strong fountain effect appeared up to +30 degree in latitude, the satellite measured the enhancement of Ne, while Te further decreased due to the eclipse. This feature differs from another eclipse case [Wang et al., JGR, 2010]. In the presentation, we discuss quantitatively ionospheric dynamics during the total solar eclipse.

Keywords: Total solar eclipse, Ion density, Electron density, Gravity wave