Characteristics of Atmospheric Gravity Waves Observed during the WAVE2000 Campaign

Hisanaga Onishi[1], Yoshinori Yamada[2], Hiroshi Fukunishi[3], Minoru Kubota[4], Mamoru Ishii[4], Yasuhiro Murayama[4]

[1] Earth Physics, Tohoku Univ, [2] Department of Geophysics, Tohoku University, [3] Department of Geophysics, Tohoku Univ., [4] CRL

http://pat.geophys.tohoku.ac.jp/~ohnishi/

On January 2000, the WAVE 2000(Waves in Airglow Structures Experiment over Kagoshima in 2000) campaign was carried out in Kagoshima. The purpuse of this experiment is to understand the mechanism of small-scale gravity wave structures in airglow image and to compare the altitude of the airglow emission layer estimated by ground-based triangulation with the altitude obtained from in-situ measurement by rocket. The ground observations by all-sky imagers were carried out in three sites. We obtained image data of OH Meinel band, O2 atmospheric band,and OI 557.7 nm on 6 nights during this campaign. We have calculated wave parameters using the 2-dimentional FFT method. Based on these parameters, we will discuss the general characteristics gravity wave observed during this campaign.

On January 2000, the WAVE 2000 (Waves in Airglow Structures Experiment over Kagoshima in 2000) campaign was carried out in Kagoshima. The purpuse of this experiment is to understand the mechanism of small-scale gravity wave structures in airglow image and to compare the altitude of the airglow emission layer estimated by ground-based triangulation with the altitude obtained from in-situ measurement by rocket. The ground observations by all-sky imagers were carried out in these site; Kagoshima Space Center (31.25N, 131.08E), Yamagawa Radio Observatory (31.20N, 130.62E), and Osumi Athletic Field (31.59N, 131.00E). We obtained image data of OH Meinel band, O2 atmospheric band,and OI 557.7 nm on 6 nights during this campaign. We have calculated wave parameters (horizontal wave length, phase speed and propagation direction) using the 2-dimentional FFT method. Based on these parameters, we will discuss the general characteristics gravity wave observed during this campaign.