

Observation of plasma waves in ELF range by SS-520-2 Rocket

Daisuke Tomishima[1], Taketoshi Miyake[2], Toshimi Okada[3], Hirotsugu Kojima[4], Yoshikatsu Ueda[5], Hiroshi Matsumoto[4]

[1] TPU, [2] Toyama Pref. Univ., [3] Electronics and Infomatics, Toyama Pref Univ, [4] RASC, Kyoto Univ., [5] Radio Science Center for Space and Atmosphere, Kyoto Univ

SS-520-2 sounding rocket was launched at Svalbard rocket range on Dec. 4, 2000. EFD (Electric Field Detector) onboard SS-520-2 rocket was designed to observe DC electric field and low frequency waves (0-50 Hz), and succeeded to obtain fine data in 730 seconds. According to spectrum analysis, strong harmonic waves of the rocket spin frequency are observed in all the observation period. This is due to the photoelectric emission. We found another low frequency waves with wide band spectrum of 20-40 Hz, and the peaks of their spectrum exist around 30 Hz. These waves are observed at the altitude of about 1100 km. Since the ion cyclotron frequency is about 34 Hz in the region, we could not conclude that these waves are the ion cyclotron waves.