

DC Electric Field Measurements in the Cusp Region by SS-520-2 Rocket

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

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

<http://www.rdw.pu-toyama.ac.jp/>

SS-520-2 sounding rocket was launched from Norway at Dec. 4 2000, and succeeded to observe the noon cusp region and obtain fine data of particles and plasma waves.

We are analyzing data obtained by EFD (Electric Field Detector) onboard SS-520-2 rocket.

EFD is designed to observe DC electric fields and plasma waves with frequencies up to 50Hz.

Since SS-520-2 rocket flew across Earth's magnetic field, EFD observation data contain inductive electric fields.

We eliminated inductive electric field with using some assumptions, and succeeded to confirm natural DC electric field.

The natural DC electric field is observed at almost the top of rocket orbit for only 20 sec, and its strength is about 30mV/m.

The direction of the DC electric field is estimated to be south-east and downward to the Earth.