Japan Geoscience Union Meeting 2015
(May 24th - 28th at Makuhari, Chiba, Japan)

PCG31-23 Room:202 Time:May 28 17:45-18:00

Evaluation of the effective measurement frequency for the digital fluxgate magnetometer installed in the S520-29 rocket

NOMURA, Reiko[1*] ; MATSUOKA, Ayako[1] ; ABE, Takumi[1]

[1]ISAS, JAXA

The digital fluxgate magnetometer (DFG) is newly developed and installed in the S520-29 rocket launched on 17 August 2014. We expand the effective measurement frequency to higher frequencies by performing internal processes in the sensor and outputting the residual magnetic fields as the telemetry data. This is the new method that can be applied into the future rocket and satellite missions for higher-accuracy, downsized, and power-saving measurements.

The sun sensor is also installed in the S520-29 rocket and the direction to the sun from the rocket is accurately measured. By comparing the magnetic field in the direction to the sun observed by DFG to the one calculated by the model (e.g., IGRF), we investigate the magnetic field offset in the direction of the spin axis caused by DFG or the rocket, and also evaluate the stability of DFG measurement during the flight operation. In our presentation, we present how the new-type DFG improved its effective measurement frequency.