

Plasma and charged particle measurements by Bepi-Colombo MMO

Yoshifumi Saito[1], Masafumi Hirahara[2], Takeshi Takashima[3], Kazushi Asamura[1], Toshifumi Mukai[1]

[1] ISAS, [2] Dept. Phys., Rikkyo Univ., [3] Particle and Astro. Phys. Sci, Nagoya Univ.

According to the previous satellite observation (Mariner10 fly-by), Mercury has a magnetosphere with its own intrinsic magnetic field. In order to investigate the structure and dynamics of the Mercury magnetosphere, an orbiter Bepi-Colombo MMO is planned to be launched in 2009 as a joint mission between ESA and ISAS.

Since the response time of Mercury's magnetosphere with respect to the solar wind variation is about 10 times faster than that of the Earth's magnetosphere, the time resolution of the instruments on MMO should be high. We will propose comprehensive instruments for plasma and charged particle observation with sufficiently high time resolution, wide energy range, wide dynamic range, wide angular coverage, and high mass resolution. The plasma and charged particle instruments consist of 6 sensors and common electronics. The 6 sensors are 2 electron energy spectrum analyzers(ESA), an energy mass spectrum analyzer(MSA), a solar wind ion energy analyzer(SWA), high energy electron analyzer(HEP-ele), and high energy ion analyzer(HEP-ion).