International Session (Oral) | Symbol P (Space and Planetary Sciences) | P-CG Complex & General

[P-CG11_28AM1]Instrumentation for space science

Convener:*Ayako Matsuoka(Research Division for Space Plasma, Institute of Space and Astronautical Science, Japan Aerospace Exploration Agency), Ichiro Yoshikawa(The University of Tokyo), Chair:Ayako Matsuoka(Research Division for Space Plasma, Institute of Space and Astronautical Science, Japan Aerospace Exploration Agency), Ichiro Yoshikawa(The University of Tokyo)

Mon. Apr 28, 2014 10:00 AM - 10:45 AM 421 (4F)

This session will cover instrumentation and measurement techniques for the study of space science. We welcome contributions discussing newly designed instruments, and mission oriented instruments for satellites / sounding rockets already in space or near launch as well as the ground based instruments. Status reports on the space missions are also welcome. This is the international session. We encourage the contributions especially from the Asian countries based on their own space missions.

10:30 AM - 10:45 AM

[PCG11-P02_PG]Development of Electron Temperature and Density Probe (TeNeP) for Nano- and Micro-satellites -II

3-min talk in an oral session

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Keywords:Electron Temperature and Density Probe, nano/micro-satellite, Electron Temperature, Electron Density, electrode surface contamination, satellite/probe area ratio

The nano/micro-satellite becomes popular for the study of near earth environment. To measure the electron temperature (T_e) and electron density (N_e) in the ionosphere, we have developed the Electron Temperature and Density Probe (TeNeP). The TeNeP measures T_e and N_e based on principles of electron temperature probe (ETP) and planar impedance probe (IP). By combining systems of ETP and IP, T_e and N_e can be measured by one single probe. The TeNeP system has advantages not only as being small, light weighted and low power consumption that fulfills the needs of instruments onboard nano/micro-satellites. It also overcomes problems associated with electrode surface contamination and satellite/probe surface area ratio for DC Langmuir probes.

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