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## **In-situ observations of the Ionospheric F2-Region from the International Space Station**

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The Floating Potential Measurement Unit (FPMU) is a multi-probe plasma package currently on the International Space Station (ISS) that is designed to provide direct measurements of the spacecraft potential and local ionospheric plasma environment. The instrument suite was installed in August, 2006 and consists of four probes: a floating potential probe, two Langmuir probes, and a plasma impedance probe. In this paper we will first give a brief description of each probe, its operational aspects, and an example of the inter-instrument comparisons. Comparisons will also be shown of the electron density and temperatures derived from the FPMU probes with those from ultraviolet imagers, ground based incoherent scatter radar, and ionosonde sites. Finally we will present preliminary results including observations of nighttime equatorial density holes and vehicle charging due to interaction of the solar arrays with the plasma environment.