



Performance assessment of the DEMETER and PROBA-2 Segmented Langmuir Probes

J.-P. Lebreton (1,2), S. Štverák (3), P. Trávníček (4,3) and D. Herčík (3)

(1) Solar System Missions Division, Research and Scientific Support Department, ESA/ESTEC, Keplerlaan 1, Noordwijk, Netherlands (jean-pierre.lebreton@esa.int / Fax: +31 71 565 4697), (2) CNRS/LPC2E, 3a, Avenue de la Recherche Scientifique, 45071 Orléans, France, (jean-pierre.lebreton@cnrs-orleans.fr), (3) Astronomical Institute, AS CR, Boční II 1401, 141 31 Prague, Czech Republic; (4) Space Sciences Laboratory, UC Berkeley, 7 Gauss Way Berkeley, CA 94720-7450, USA

Abstract

The Segmented Langmuir Probe (SLP) is a variant of the classical Langmuir Probe. The spherical sensor of the SLP is divided in several sectors that make a multi-electrode spherical configuration that provides additional capability compared to a single electrode Langmuir Probe. A 6-sector SLP, together with a classical cylindrical sensor, which constituted the Instrument Sonde de Langmuir (ISL), was flown on the CNES Demeter satellite launched in June 2004 on a 700-km altitude high-inclination orbit. ISL worked flawlessly till the satellite was decommissioned in March 2011. It provided more than 6 years of data, although the SLP was only operated occasionally. Two 7-sector SLP's, which constitutes the Double Segmented Langmuir Probe (DSLP) currently flying on board the ESA Proba-2 mission, which was launched in November 2009 also on a 700-km altitude high-inclination orbit. DSLP is operating nominally. The unique capability of the SLP in the different plasma environments encountered by both missions will be highlighted and its relevance as a potential instrument for future planetary mission orbiters will be discussed.

1. Introduction

The abstract will be completed after submission, using the abstract update opportunity offered on the web site

