



## **Magnetopause Current Measurements Using the Magnetospheric Multiscale Mission: A Dynamic Current-Strength in Regions of Opposing Magnetic Forces**

Christopher T. Russell (1), Robert J. Strangeway (1), Cong Zhao (1), Brian J. Anderson (2), Wolfgang Baumjohann (3), Kenneth R. Bromund (4), David Fischer (3), Larry Kepko (5), Guan Le (4), Hannes K. Leinweber (1), Werner Magnes (3), Rumi Nakamura (3), Roy B. Torbert (5), and James L. Burch (6)

(1) UCLA, Institute of Geophysics, Earth Planetary and Space Sciences, Los Angeles, United States ([ctrussel@igpp.ucla.edu](mailto:ctrussel@igpp.ucla.edu)), (2) John Hopkins University, Applied Physics Laboratory, Laurel, MD, USA, (3) Austrian Academy of Sciences, Wien, Austria, (4) NASA, Washington, D.C., USA, (5) University of New Hampshire, Durham, NH, USA, (6) Southwest Research Institute, San Antonio, TX, USA

The fluxgate magnetometers on the MMS mission with the aid of the electron drift instruments have been turned into an extremely precise curlometer, probing the currents in volumes down to about 10 km across. These measurements have revealed that the magnetopause is a dynamic boundary in more than just its location, but also in its thickness, current strength and force balance. We examine sample magnetopause crossings and illustrate this unexpected behavior of the boundary.