

Solar-Terrestrial Research in Brazil

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In the framework of North-South research collaborations, pursued in recent years by Brazilian scientists in the field of solar-terrestrial Physics, the following activities can be mentioned: (a) Research on the origin and dynamics of intense geomagnetic storms, with especial interest on their forecasting possibilities. This is being done at INPE in collaboration with the Space Physics Section of the Jet Propulsion Laboratory at Pasadena - California, using analysis and modeling of measurements obtained in the interplanetary medium and in the magnetosphere by several spacecraft. (b) Research on the dynamics of the equatorial and low latitude upper atmosphere and ionosphere at INPE, using a broad set of ground equipment and sounding rockets, in collaboration with several research groups of USA, Canada and Japan. (c) Research on the solar causes of geomagnetic storms done at INPE in collaboration with the SolarInterplanetary research group of the Max Planck Institute of Lindau, Germany, using measurements of coronal mass ejections from the sun as obtained by the SOHO satellite. (d) Implementation of a "space weather" forecasting Center at the Southern Brazilian facility of INPE, in Santa Maria, RS, using a solar cosmic rays-muon detector facility, in collaboration with the Bartol Research Institute of the University of Delaware, USA and the Physics department of the Shinshu University of Japan. (e) Recent definition of a "space weather" interplanetary-magnetospheric satellite by the Brazilian and Russian Space Agencies, to be implemented by IKI and INPE. (f) Implementation of an equatorial aeronomy satellite at INPE, in collaboration with research groups of USA, Japan and Canada. (g) Implementation of a "space weather" laboratory at INPE, as a mirror center of the ISTP - Goddard/NASA Center for space weather forecasting and monitoring.

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