



The COSPAR Capacity Building Workshop “Space Weather Science Towards Improved Forecasting” was hosted by Brazilian Space Weather Program (EMBRACE - "Estudo e Monitoramento BRAsileiro do Clima Espacial") in the National Institute for Space Research (INPE - "Instituto Nacional de Pesquisas Espaciais"), Sao Jose dos Campos, Sao Paulo, Brazil from September 17 to 28, 2018.

This workshop had 140 applicants from Europe, Asia, Africa, and the Americas (North, Central, and South). Among these, 30 students and young researchers from Argentine, Brazil, Chile, Colombia, Costa Rica, Ecuador, Egypt, Finland, India, Mexico, Norway, Peru, Russia, South Africa, Spain, and the USA



were selected to attend the workshop in a gender-balanced distribution of attendees. For this workshop, the host institution provided four rooms that stayed available during the entire event for the necessary lectures and activities: a 60 seat auditorium, one presentation room with computers for 30 students, and two smaller places for cooperative work and discussions. The opening ceremony took place in a large auditorium within the INPE’s campus.



The team of invited lecturers consisted of Dr. Natchimuthuk Gopalswamy (Solar Physics - NASA, USA), Dr. Raffaella D’Amicis (Interplanetary Medium - INAF, Italy), Dr. Ramon Edgardo Lopez - (Geomagnetic Field and Earth Magnetism - University of Texas, USA), Dr. Yuichi Otsuka (Ionized and Neutral Earth's Atmosphere - Nagoya University, Japan). Also, the students had the opportunity to attend special talks from Dr. Clezio Marcos De Nardin (INPE, Brazil), Dr. Joao Francisco Galera

Monico (UNESP, Brazil), Dr. Alexi Glover (ESA, Germany), and Dr. Arnaud Masson (ESA, Spain), Dr. Toshiyuki Kurino (SPO-WMO, Switzerland). Other five special talks about the Space Weather studies in the Americas were conducted by Dr. Joaquim Costa (INPE, Brazil), Dr. Juan Alejandro Valdivia (UChile, Chile), Dr. Juan Americo Gonzales-Esparza (UNAM, Mexico), Dr. Sergio Dasso (IAFE UBA-CONICET, Argentina), and Dr. Yaireska M. Collado-Vega (NASA, USA). Additional support for this workshop was provided by the Science Foundation of Sao Paulo State (FAPESP), the Brazilian Post-Graduation Central Coordination (CAPES), the World Meteorological Organization (WMO), the European Space Agency (ESA), and the Brazilian Society for Space Geophysics and Aeronomy (SBGEA).

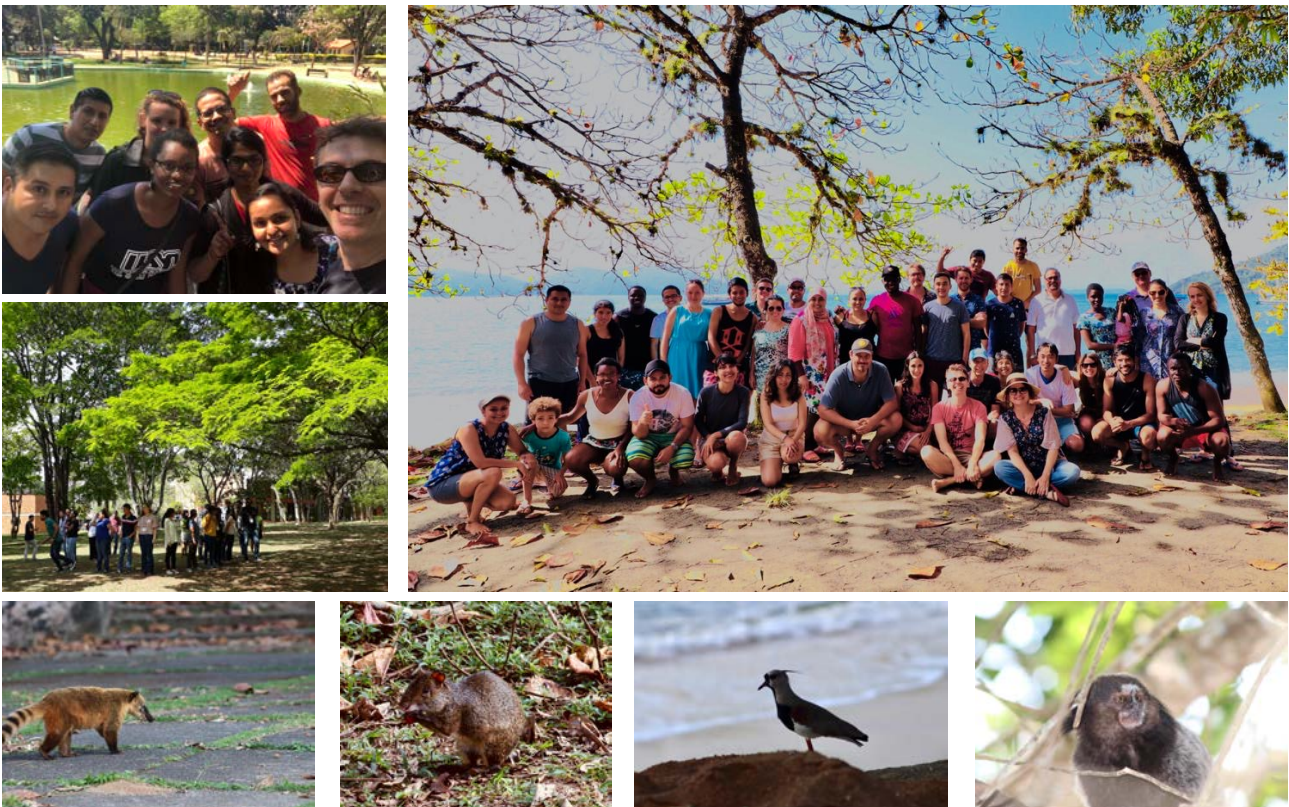


The workshop introduced the students to a system-wide investigation of Space Weather phenomena, bringing together topics in Space Weather Science and Applications, such as Solar Physics, Interplanetary Medium, Geomagnetic Field, and Earth Magnetism, and Ionized and Neutral Earth's Atmosphere. During the activities, the students received a theoretical introduction to the analysis of space-based and ground system networks data during the morning, which was used in the hands-on activities in the afternoon. This dynamic allowed the workshop participants to understand and developed skills related to the investigation of Space Weather phenomena. In the second day of work, six teams were formed: for each team was given a period of interest and asked to analyze the space weather events. The students developed the projects which were presented to the participants on the last day. These projects were tutored by the invited and local scientists. The activity helped the students to develop their skills in analyzing and interpret space weather data. After the six presentations, the groups were evaluated and received souvenirs and special diplomas corresponding to the highlighted features of their presentation judged by the lecturers and the local scientists.





During the weekend the students had the opportunity to have contact with the local culture, knowing typical food and fruits, visiting two city parks in Sao Jose dos Campos, and having a gracious day trip to a historic island in an Atlantic Forest preservation area on the coast.



Working together side by side to embrace challenging investigative themes, the students developed interdisciplinary skills and new collaborative contacts with students and scientists from the Space Weather community.