

EARTH OBSERVATION SYMPOSIUM (B1)
GEOSS and Carbon Monitoring from Space (6)

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INTERNATIONAL SYSTEMS, MISSIONS AND PROGRAMS TO SUPPORT 21ST CENTURY
CARBON CYCLE MONITORING REQUIREMENTS

Abstract

The study of climate change relies heavily on observations of the Carbon Cycle both as a model input, and as a part of the validation of those models. These observations are collected by in situ ground stations, airborne measurements and satellite observations, each providing a valuable source of data. With large initiatives under consideration, the satellite remote sensing community is being asked what contribution can be made and which carbon data products can be delivered on an operational basis. While a number of space agencies around the world have and are continuing to develop missions focusing on various aspects of the Carbon Cycle, the broad nature of the challenge will require an approach across agencies, governmental and non-governmental organizations.

In 2010, an international team of students and professionals assembled during International Space University's Space Study Program in Strasbourg, France, to examine how existing space-based Earth observation missions and tools can be applied to Carbon Cycle observations and where gaps exist in current space-based Earth observation missions and tools to define missions or programs that may address those gaps. The team will develop recommendations for future international planning to implement space technologies for Carbon Cycle observations and will address potential issues of international cooperation, legal, philosophical, commercial and outreach scope that may arise and other issues that may be identified including potential models of participation of developing countries and non-governmental organizations in implementing such future space assets. The paper will present the results of the interdisciplinary study.