Multi-sensor Observations of Vegetation and Snow in Siberia

Thuy Le Toan
Centre d'Etudes Spatiales de la Biosphère (CESBIO), Toulouse, France,
E-mail: thuy.letoan@cesbio.cnes.fr

The Northern Eurasia is home to several processes that are unique and that are both greatly affected by climate change and are likely to have big consequences for global climate. In order to understand the consequences of climate change on such processes and their role within the complex land-atmosphere interface, it is necessary to understand process behaviour both by observations and by modelling. For Earth Observation, this requires the mapping of heterogenuous properties of the surface features from satellite data, their validation and extension to appropriate spatial and temporal scales and a close integration with biospheric models.

This paper deals with the role of Earth Observation (EO) data in studies of land surface processes in Siberia. A large range of EO data provided by visible, infrared, passive and active microwave sensors at various spatial and temporal resolutions are being used. Illustrations will be given on the use of multisensor EO data a) to observe the effects of climate changes on vegetation and snow cover in Northern Eurasia, and b) to monitor the vegetation Net Primary Productivity and to assess the Siberian forests as Carbon sources or sinks.