

LAND SURFACE ANALYSES AT NIMH OF BULGARIA: OPERATIONAL METEOROLOGICAL SERVICES AND APPLICATIONS

Julia Stoyanova

National Institute of Meteorology and Hydrology, Bulgarian Academy of Sciences
Tsarigradsko chaussee 66, 1784 Sofia, Bulgaria, E-mail: Julia.Stoyanova@meteo.bg

The analysis of moisture and heat energy exchange at the Earth land surface is a key element of the operational systems for monitoring weather and climate extremes, which may provoke natural hazards.

Operational activities of monitoring the status of terrestrial vegetation as a dynamic component of the climate system and related research are performed in the frame of a Land Surface Analyses /LSA/ project at the National Institute of Meteorology and Hydrology. Our work is based on an integrated approach, including numerical modeling of land surface processes of energy- and mass- exchange and use of *insitu* measurements. In parallel, data from satellite observations by Meteosat Second Generation providing quantitative estimates of land surface parameters and processes are used.

This paper presents results of our work in the following aspects:

- Development of a regional Land Surface Scheme, introduced in operation as a Soil Vegetation Atmosphere Transfer model, 'SVAT_bg';
- Meteorological products and applications based on numerical SVAT_bg model that are operationally generated at NIMH in support to agricultural practice and for early detections of hazard events (potential vegetation fires, over-moistening and risk of flash floods);
- Reception and processing of LSA satellite products from the geostationary MSG and environmental Aqua/Terra satellites that are available for use by National Institutions in Bulgaria.

To strengthen the capacity for providing Land Surface Services based on satellite data, NIMH of Bulgaria performs technology transfer through workshops, training courses, and information sessions. These activities are realized in cooperation with EUMETSAT in the frame of **S**atellite **A**pplications in **L**and surface analyses **G**roup for **E**astern **E**urope (SALGEE). General efforts of SALGEE project are addressed to foster an integrated approach in the research and operational areas of meteorology and climatology in support to LSA Satellite Application Facilities. The main SALGEE activity is focused to the promotion of EUMETSAT satellite (MSG and EPS) data and products related to: land, land-atmosphere interaction, biospheric applications and thus to contribute and increase the benefits from them for the environmental monitoring.