



## **MODIS satellite images of the 2005 Banat centennial flood event, Romania - reappearance of an old wetland area**

**G. Timár** (1), B. Székely (1), G. Molnár (1), Cs. Ferencz (1), A. Kern (2), Cs. Galambos (3), P. Bognár (1,4), J. Lichtenberger (1), Sz. Pásztor (1) and P. Steinbach (4)

(1) Space Research Group, Institute of Geography and Earth Sciences, Eötvös University of Budapest, Hungary (timar@ludens.elte.hu / Fax: +36 1 3722927 / Phone: +36 1 2090555 6651), (2) Department of Meteorology, Institute of Geography and Earth Sciences, Eötvös University of Budapest, Hungary (anikoc@nimbus.elte.hu), (3) Hungarian Geological Institute, Dept. of Informatics, Budapest, Hungary (galambos@mafi.hu), (4) Research Group for Geoinformatics and Space Science, Hungarian Academy of Science (spacerg@sas.elte.hu)

Devastating centennial snowmelt flood event occurred at the Timis/Temes River, Romania, flowing from the Southern Carpathians to the Danube in April 2006. The process of the snowmelt, then the inundation of some parts of the floodplain were mapped using MODIS (MOderate Resolution Imaging Spectroradiometer) true and false color satellite imagery, recorded at the receiving station of the Eötvös University, Hungary. The outline of the inundated area show the reappearance of an old wetland block that was eliminated in connection with the general water control measures at the end of the 19th century.

Besides the current satellite images, a series of historical maps, map of Müller (1769); the map of Lipszky (1804), sections of the first (1784) and second (1859) military surveys of the Habsburg Empire, show the outline and the extents of the wetland area. After the river regulations, the almost flat region became densely populated. Medieval towns and villages expanded to the low floodplain, and even new settlements were established there. These villages are endangered by major flood events and some of them were partially or totally destroyed during the 2005 flood. Combining historical maps, satellite imagery, together with the digital elevation models offer a tool to outline the area affected by this long-term hazard.

The research was supported by the Ministry of Informatics and Communication and the Hungarian Space Office projects TP198 and TP277 and also by the National Research Fund (OTKA) project T47104.