

Project : „Infrastructure completion of hydrological research stations“
 Applicant : Institute of Hydrology Slovak Academy of Sciences
 DIHYS ITMS code 26210120009
 Period of project implementation : 11 / 2012 – 11 / 2014
 Cost of obtained instruments : 2 924 647, 01 EUR
 Number of obtained instruments: 52
 Place of project realization: Liptovský Mikuláš, Ondrašovská 16
 Michalovce, Hollého 42
 Petrovce nad Laborcom

Operational Programme : 2620002 OP Research and Development
 Priority axis : Priority axis 1 - Research and Development Infrastructure
 Measure : 1.1 Modernisation and building of technical infrastructure for research and development
 Call code : OPVaV-2011/1.1/01-SORO

Within the framework of the project DIHYS, the infrastructure of technical equipment was completed for hydrological research stations of Institute of Hydrology SAS in Michalovce and Liptovský Mikuláš for the purpose of complex monitoring of hydrological processes in lowland and mountain areas.

As a result, it significantly improved the quality and variety of instrumentation as well as of research infrastructure by acquiring 52 instruments. Some instruments, software and equipment are rare within the European research scope. The most important of these are listed on the presented poster.

Among unique instruments, there certainly belongs a Lysimeter station of the Hydrological Research Base IH SAS which was built on the East Slovakian Lowland in Petrovce nad Laborcom.

Lysimetric research is currently a very interesting and progressive approach to monitor complex ecosystems in nature-close conditions



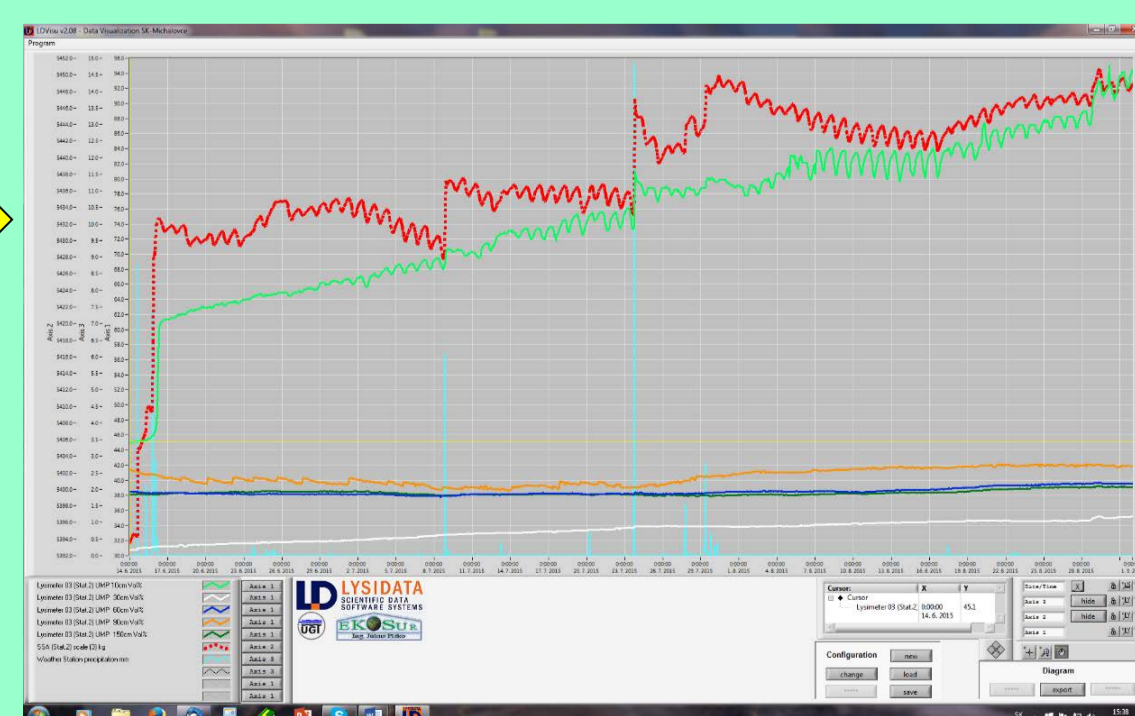
It is a container set of five lysimeters with different soil monoliths of cylindrical shape with area 1m² and depth 2.5 m with groundwater regulation.

All lysimeters have highly accurate weighing system and very extensive sensor equipment for measuring volumetric soil moisture (by 0.10 m), the humidity potential and soil temperature (each 0.40 m) and also sampling devices for the collection of soil water in three height levels.

It includes special software for automatic data collection, wireless data transmission, its processing and storage in a database.



Lysimetric set also includes a complex automatic weather station for measuring relative humidity, wind direction, wind speed, globally radiation, air temperature and precipitation.



CONSTRUCTION LYSIMETER STATION IN PICTURES

Exploratory hydrological well (determination of HPV, hydrophysical parameters, reduction of GWL in excavation pit, now serving for regulation of GWL in Lysimeters).



In April, five different soil monoliths were taken from five localities of various soil types which were characteristic of ESL (sands -...- clays).



The beginning in March, 2014.

Immediately after collection of five different soil monoliths, the undisturbed soil samples were taken (5 x 50 samples) to Kopecky's cylinder (to determine pF curves and other hydrophysical characteristics) in the horizontal as well as vertical direction of 10 cm to a depth of 2.5 m. Disturbed soil samples (5 x 25 samples) were also taken for soil texture analysis by the same direction of 10 cm to a depth of 2.5 m. Altogether, 375 soil samples were processed.



... for placing the lysimetric containers into which were installed soil monoliths with sensors.

