



## **Spatial characteristics of the air humidity in Slovakia in the period 1961-2010**

Katarína Mikulová, Hana Kapolková, Peter Kajaba, Gabriela Ivaňáková, and Pavel Št'astný  
Slovak Hydrometeorological Institute, Bratislava, Slovakia (peter.kajaba@shmu.sk)

The amount of water vapour in the atmosphere is generally termed as the air humidity. The air humidity is one of the indicators of climatic system, which has a large variability. Its value reflects variations of other meteorological characteristics, for example the air temperature, the cloud cover (the duration of sunshine) and the amount of precipitation and some other factors. The variability of the air humidity in Slovakia depends mostly on the topography (altitude, exposure of the slopes, land cover and land use, nearby water reservoir).

The air humidity in the Slovak Hydrometeorological Institute (SHMI) is directly measured by Augustus psychrometer, and both hygrometer (hair) and continuous progress humidity records of hygrograph are used as a secondary measurements. Since 1995, the SHMI has been regularly receiving the data of the air humidity from automatic meteorological stations too.

The data obtained from the August psychrometer measured in climatic observation hours (7:00, 14:00, 21:00 Local Mean Time) were used as a primary source of information in the analysis. Maps of the air humidity characteristics are based on the data from selected 62 climatological stations, which have had the completeness of the dataset in this period at least 50%. Data series had been homogenized in the MASH software.

The hourly data from automatic meteorological stations were used only for the daily variability of the air humidity analysis. In the paper, there are presented maps (annual, monthly, seasonal) of the relative air humidity, the water vapour pressure and the saturation deficit, their annual and daily variability and spatial distribution.