



## **Possible changes in evapotranspiration, air humidity and irrigation characteristics in Slovakia**

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The aim of the paper is an evaluation of possible changes in evapotranspiration, air humidity and irrigation monthly and daily (extremes) characteristics in Slovakia in the context of climate change scenarios (based on two regional climate models (RCMs) Dutch KNMI and German MPI) for selected 10 meteorological stations in Slovakia in different altitude up to the year 2100. Air humidity characteristics play very important role in all climate change impact models. We prepared scenarios of three air humidity elements: relative air humidity (%), water vapor pressure (hPa) and saturation deficit (hPa). The results showed no significant changes in relative air humidity (only some decrease), but significant increase in water vapor pressure and saturation deficit averages and extremes, mainly caused by expected increase of air temperature. Modeled mean monthly potential evapotranspiration sums were calculated by the simple Zubenok method (using modified RCMs outputs). All modeled data are compared also with the calculated ones based on measured meteorological data in the period 1951-2010 (using Budyko complex method). The irrigation characteristics are assessed according to soil moisture calculation and irrigation classification accepted in Slovakia. It was found that also in 1951-2010 a significant shift of climatic regions toward the north and higher altitudes took place. Comparable development is expected according to both RCMs scenarios also in 2015-2100, what can bring serious problems in adapting to drier and more extreme climate in Slovakia.

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