



Comparison of groundwater flow-systems and snow-melt anomalies seen by MODIS satellite images – case study of Kelemenszék Area, Duna-Tisza Interfluve, Hungary

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The study area is situated in the central zone of the Pannonian Basin. This region is characterized by moderate precipitation, higher evapotranspiration and special environmental conditions which are reflected by a unique vegetation system. Topography is characterised by low relief, however the area is not flat plain. Hydrogeological system is thoroughly studied: recharge and discharge zones are mapped in detail for the Duna-Tisza Interfluve. Two groundwater flow domains were identified: a gravity-driven meteoric fresh water and an over-pressured deeper domain of saline water. Salinity of surface, playa lakes and vegetation pattern reveals the areas where deep source waters are channeled to the surface. As water transports heat, it was planned to check how this extra heat could be seen on satellite images. For the saline discharge of the Kelemenszék Lake Area it was found that on some images taken in snow melting season the melting pattern can reflect the groundwater recharge-discharge map. Discharge zones are appearing in darker white. Although it was supposed that appearance of the saline and not saline type discharge zones would also differ due to the salinity. Nevertheless on studied images characteristic distinction was not found between the two type discharge zones; only re- and discharge zones could be differentiated.