



## **Observation and analysis of microscale heterogeneity of infiltration and water flow in chernozem and black-chestnut soils**

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Water flow in soil has non-uniform character, both in space, and in time. The quantitative estimation of these processes and construction of adequate models of preferential flow is very important for environment. The aim of tests is to observe microscale heterogeneity of infiltration and flow in different soils, to estimate distributing of quantity of infiltration water and flow on area. The infiltration tests were carried out from August 2005 till September 2007 in irrigated fields of the Saratov region (Volga region) of Russia. For the differentiated gathering the filtered water we used 2 types of microlysimeters, consisting of 36 and 64 individually sampled cells. Monitoring of moisture was carried out with the probe TDR. Microlysimeters were installed on different depths. The tests showed that infiltration and flow distribution are very heterogeneous (variation coefficient 180-400%). Maximal flow for some cells is in 10 and more times higher than mean value for all cells. The major flow passes through 5-7 cells for black-chestnut soil and 3-5 cells for chernozem soil. We can observe high correlation between contiguous steps of watering both in infiltration and in flow.