

Modern approaches in urban water management

As of the mid-20th century, the population residing in cities reaches approximately a billion. The population has seen triple-sized increase in the past 50 years. The World Bank estimates that by the year 2030 the urban population will have reached up to 5 billion inhabitants, which represents 70% of the world population.

Rain events in urban areas wash-off sediments and pollutants mobilized on urban surface and pass them over the surface until drainage network and consequently reach sedimentation tanks. According to the EU directive 2001/600/EEC, runoff water on storm water by number of dissolved and suspended pollutants is equalized to sewage water. For domestic wastewater, the directive states a discharge concentration of 60mg/l for total suspended solids (TSS). But nowadays more and more researchers mention that this limit is exceeded by several times.

In order to minimize influence of pollutants on receiving water bodies during rapid urbanization, topics like - interaction between rain waters and surface characteristics, sediment mobilization on surface and their wash-off parameters, effect of the first flush, analyse peculiarities of sedimentation tanks and water treatment plants – become of utmost importance. This also brings the necessity of using modern numerical modelling in studying the urban water management.

Keywords: urban water, ecology, pollutants, numerical models, water management.