



Urban stormwater management: Calibration and validation of an off-line retention tank dynamic model for water quality

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ABSTRACT

As the integrated management of urban wastewater systems becomes more and more popular, the development of wastewater management subsystem models appears essential to improve the understanding of the pollutant dynamics and their interactions. In such a context, a review of the literature reveals a lack of efficient models describing the dynamics of the water quality stored in off-line retention tanks. A model has thus been proposed based on the fractionation into three classes of the particle settling velocity distribution measured in the field using the ViCAs settling test. In this paper, full-scale field data sets from three different events are used for 1) calibrating this new dynamic retention tank model (two data sets) ; and 2) validating that model on the last data set. The results show a good fit between observed and simulated data both for the total suspended solids (TSS) and the total chemical oxygen demand (COD_t).

KEYWORDS

Combined sewer overflow, settling velocity, urban wastewater modelling, water quality