



## **Dynamic Substance Flow Analysis of rainfall-mobilized Micropollutants**

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### **ABSTRACT**

Certain rainfall mobilized micropollutants have been found in relevant concentrations in various water bodies across Switzerland. To distinguish contributions by sewage treatment plants and combined sewer overflows, extensive and expensive measurement campaigns would be necessary. Indicators could be used to optimize such campaigns if they are able to give a sound estimate of the local emission. In this framework a dynamic substance flow analysis was carried out. It is able to use information on land-use to calculate the loads discharged via combined sewer overflows (CSOs). The overall model results show, that combined sewer overflow emissions of urban areas are an important contribution to the pollutant load in surface waters. Especially for pollutants washed off from impervious areas, such as roofs or facades, loads were estimated to be in the same range as the loads discharged towards the sewage treatment plants. E.g. for Mecroprop, which originates primarily from buildings and gardens, it was found, that CSOs are a major contributor to urban emissions. Referring to the load entering the sewer more than 70% of the load from buildings and more than 60% of the load originating from gardens leave the sewer systems via CSOs. Furthermore, the results showed that size of the population indicates the emission of Triclosan and Copper while the impervious area is an indicator for the release of Mecoprop and Glyphosat.

### **KEYWORDS**

pesticide, diffuse pollution, combined sewer overflow, GIS-analysis