UFZ-Seminar „Wasser and Environment“

HELMHOLTZ ZENTRUM FÜR UMWELTFORSCHUNG UFZ

18th April 2016, 3 pm

Saal, Brückstr. 3a, Magdeburg

Peter Krebs

TU Dresden)

gives a talk on:

Receiving water impacts from the wastewater system

In sewers, load peaks develop due to stormwater runoff. Particulate material is eroded from the catchments surface and from the sewer sediments causing higher particles concentrations and thus the loads are increasing over-proportional to the flow increase. Particles from the catchments surface are loaded with e.g. heavy metals and PAHs and are thus a major source of pollution in both combined and separate sewer systems. Dissolved compounds, e.g. ammonium originating mainly from urine, are pushed out from the combined sewer system with only little dilution in the initial phase of an event. Pharmaceuticals – as other sewage-born compounds – may be transported as solubles or adsorbed to particles surfaces, may be degradable or inert, and thus exhibit a wide range of transport and impact characteristics.

As a consequence of the dynamic erosion and push-out effects, so-called shock loads develop for the wastewater treatment plant as well as for the receiving water via combined sewer overflow or stormwater discharge. Combined sewer overflows and stormwater effluents typically develop in a phase, where the receiving water still exhibits the base flow rate that prevailed before the rain event started, as the rain-runoff process is much faster in the urban catchment than in the river basin. Based on extreme value analysis of data generated with integrated modelling, we can provide peak concentration – return period functions that could eventually be used by river ecologists to evaluate the impacts to the aquatic ecosystem.

If you are interested to join via Video-Conference to UFZ Halle or UFZ Leipzig, please send a note to nina.baumbach@ufz.de by Wednesday, 13.04.16, 12am.