



Atmogenic pollutants as reactive tracers for identification and quantification of important transport processes in a karst area at the catchment scale

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The Swabian Alb is an Jurassic limestone plateau with more than 2.500 caves and one of the most important karst areas in Germany. In this area the *Blautopf*, the second largest karst spring in Germany with a discharge of 300-30.000 l/s, is located. The catchment of the *Blautopf* has an extension of 160 km² and was selected for investigations with the objective to establish a input/output mass balance for persistent organic pollutants (POP). As representatives for such pollutants polycyclic aromatic hydrocarbons (PAH) have been chosen, because they are occurring ubiquitous in the atmosphere and accumulate in high rates in soils (Gocht and Grathwohl, 2004) About 90 % of the PAH-emission is assumed to be anthropogenic (Schauer et al., 2003).

PAH-input by atmospheric deposition into the catchment was determined by time-integrating passive samplers, which have been installed in the open field. Furthermore funnel-cartridge samplers have been set up in different caves in the catchment area to analyse the seepage water for transport of PAHs towards the groundwater. The buffer for the atmospheric deposition and the seepage water is the soil which determines potential contamination of seepage and very likely the groundwater. To quantify this extensive investigations of PAH concentrations and leaching potential in soils are ongoing.

The overall aim of this study is to identify and quantify pollutant transport processes from soils towards the groundwater which are relevant at the catchment scale.

References:

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