## **Presentation title:**

Desorption behaviours of poly- and perfluorinated substances (PFASs) derived from paper industry through soil column experiments and numerical modelling in saturated and variably-saturated conditions

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## Abstract:

Poly- and perfluorinated substances (PFASs) are emerging compounds of global concern. These chemicals, although synthetic, are ubiquitous in the global environment, strongly resistant to degradation in natural environment, bioaccumulative, and many of them are toxic to humans and animals. One of the sources of contamination in soil and groundwater is the application on farm land of fertilizer or soil amendment that is made from paper sludge, a main by-product of the paper industry – a situation currently faced by the land users of the Rastatt area in Baden-Baden region, Baden-Wuerttemberg. The contaminated soil requires treatment for further potential use in the concrete/beton industry. The purpose of this study is to understand the sorption/desorption behaviours of key PFAS compounds which are found in the impacted area in Rastatt, in saturated and variably saturated conditions. Soil column tests, lysimeter experiments, and numerical modelling are employed. The presentation will provide some preliminary results of the experiments and numerical simulations.

## Key words:

PFAS; Perfluorinated substance; Sorption; Desorption; Modelling; Hydrus-1D; Paper sludge