



IP Controlling Chemicals' Fate Lecture



Dr. Gwenaël Imfeld

University of Strasbourg, France

Wednesday, 14 November 2018, 10:00

Building 4.0, Seminar room 101

Permoserstr. 15, 04318 Leipzig

Transformation and transport of pesticides in agro-systems: insights from compound-specific isotope analysis (CSIA)

Pesticides in the environment is a worldwide issue of increasing concern. Determining pesticide fate in the field remains a challenge that may preclude adapted risk assessment and water resource management. Application of compound-specific isotope analysis (CSIA) to evaluate degradation of diffuse and low-concentration pesticides in surface hydrological contexts is mostly recent. My presentation focuses on the potential of pesticide CSIA for applications in agricultural catchments. It also highlights current challenges associated with multi-isotopic analysis of pesticides in soil and water, and recent advances from mechanistic laboratory studies. Recent development and application of CSIA to track dissipation of widely used (and often chiral) anilide and alanine pesticides on the catchment scale are presented. Pesticide CSIA can also be combined with physical modelling to identify drivers regulating pesticide fate in relation to climatic conditions. Taken together, pesticide CSIA bears great potential for source apportionment, identification of transformation reactions on a mechanistic level, and quantification of persistence/degradation on the catchment scale.

Gwenaël Imfeld is Research Scientist at the Laboratory of Hydrology and Geochemistry at the University of Strasbourg.

All interested colleagues are kindly invited.