Geophysical Research Abstracts, Vol. 7, 05035, 2005
SRef-ID: 1607-7962/gra/EGU05-A-05035

1 Deposition of persistent organic pollutants (POPs) and their accumulation in soils and sediments in different European Catchments (AquaTerra)

D. Steidle, T. Gocht, K. Ruopp, D. Kuntz, P. Grathwohl

Eberhard-Karls-Universität Tübingen, IFG, Center for Applied Geoscience, Germany, dietmar.steidle@uni-tuebingen.de

Recent findings indicate that persistent organic pollutants (POPs) accumulate in topsoil on a global scale. The objective of this work is to elucidate the long-term fate and transport of atmospheric organic compounds in soils.

To achieve this objective, polycyclic aromatic hydrocarbons (PAHs) are used as reactive tracers in different soil compartments. PAHs occur worldwide in the environment due to combustion of fossil fuels.

For field investigations, several locations in European river basins were selected. These include a small catchment (Brévilles, France) and several sub-catchments of the large river basins Danube, Ebro, Elbe and Meuse. PAH inputs, soil burdens and outputs are being quantified. Inputs are measured with a time-integrated bulk deposition sampler which uses a funnel-adsorber-cartridge device. Soil samples taken from profiles at representative locations are expected to show vertical distribution of PAH contamination in relation to soil properties, and the deposition record. Additional data from lysimeter stations will be used to quantify PAH mobility in seepage water. Time-integrated sampling with dosimeters is being used to detect PAHs in rural groundwater. For continuous surface water sampling an adsorber-cartridge-system is being developed which allows time-integrated sampling as well. Initial sampling results and the overall sampling plan will be presented.