**Surface water pollution by PAHs, PCBs and organochlorine pesticides in a central European subalpine mountain area since 1985**

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Emissions of polycyclic aromatic hydrocarbons (PAHs) and persistent organic pollutants have been decreasing since the 1980s in Europe1. However, monitoring of these pollutants in air or other environmental compartments do not date back earlier than 1995 in Central Europe2 and 1999 in Germany.

By sampling a creek, the Große Ohe, in the Bavarian Forest biweekly since 1985 and storage (< -5°C, in acid rinsed PE bottles), a unique surface water archive from an unpolluted central European background area exists.3

Samples from selected years since 1985 have been analysed for PAHs, PCBs and organochlorine pesticides by GC-MS. A number of PAHs, penta- and hexachlorobenzene, tri- and tetrachlorinated biphenyls and hexachlorocyclohexane are found. The contamination by *γ-*HCH is striking (*α*-HCH/*γ-*HCH < 0.1). DDT was not detected.

The pollutants’ mass balance during 1985-2012 is reconstructed using a multicompartment catchment model, INCA\_Contaminants4-5. The hydrobiogeochemical model was initialised with hydrological and climatological data monitored on site. The model calculates organic matter cycling and sediment dynamics in the stream along with the mass budget of contaminants in the multimedia environment. The model was tuned to the measured surface water contaminants’ concentrations in selected years in order to retrieve estimates ofatmospheric deposition flux trends in the area during the last 40 years.

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