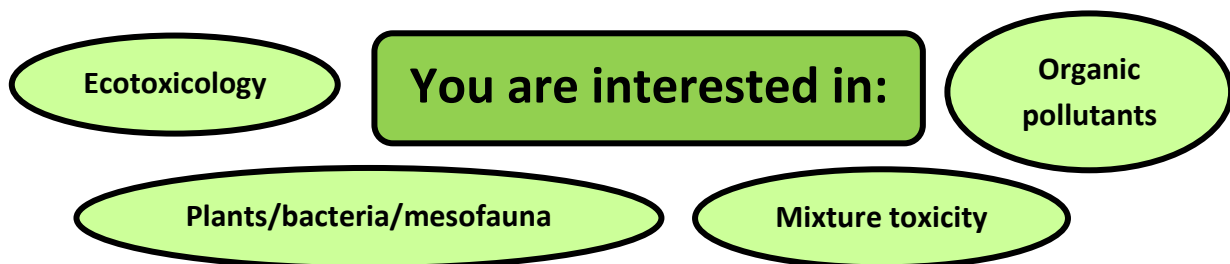


Master-/Bachelor-Thesis/Hiwi-Job

on

Mixture toxicity effects of petroleum hydrocarbons on a set of soil organisms



Background: Soils receive organic contaminants over different pathways such as spills, flooding events or atmospheric deposition. Two substance groups of concern are polycyclic aromatic hydrocarbons (PAH) and total petroleum hydrocarbons (TPH). Both groups contain hundreds of different substances of characteristic properties and many of them are present in parallel in contaminated soils. German legislation for soil protection is based on threshold values of single substances. However, contaminants have the potential to amplify or mitigate their toxicity by interacting with each other, e.g. by impacting their uptake or metabolization. Additionally, these processes can be influenced by different soil compartments such as organic matter or clay minerals.



Topics: depending on their research interest, Hiwis/candidates will test toxic effects of PAH and TPH in one or more of these ecotoxicological bioassays:

- reproduction assays with soil invertebrates such as springtails and white worms
- dehydrogenase activity assay with soil bacterium *Arthrobacter globiformis* or
- seedling emergence and growth assays with higher plants.

Further experience can be gained in environmental sample preparation and analytics using GC-MS or soil hydrophobicity measurements.

Projects or Hiwi positions can be started from **March 2022** onwards.