As recently emphasised by EFSA, toxicokinetic toxicodynamic (TKTD) models are of particular interest for regulatory risk assessment of pesticides for aquatic organisms. TKTD models can encompass a large set of mechanisms describing the compound kinetics inside organisms as well as their effect at the individual level. Compared to classical dose-response models, TKTD approaches have many advantages:

- accounting for temporal aspects of exposure and toxicity, considering data points all along the experiments and not only at the end,

- and making predictions for untested situations such as realistic field exposure scenarios (e.g., time-variable pulsed exposure profiles).

The General Unified Threshold model of Survival (GUTS) is within the most recent and innovative TKTD framework to deal with survival toxicity test data but is still underused in practice due to specialist programming and statistical skills that are necessary to run models.

This training course aims at presenting the theory of GUTS models and at introducing the participants with dedicated tools allowing the practical use of GUTS models.

Objectives

The course is intended for PhD students, researchers, and scientists in ecotoxicology and environmental sciences.

After the course participants will have:

- A better understanding of TKTD models, especially GUTS models for survival data
- An overview of ready-to-use and user-friendly tools
- Knowledge on how to use GUTS modelling in practice

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