

Training Course

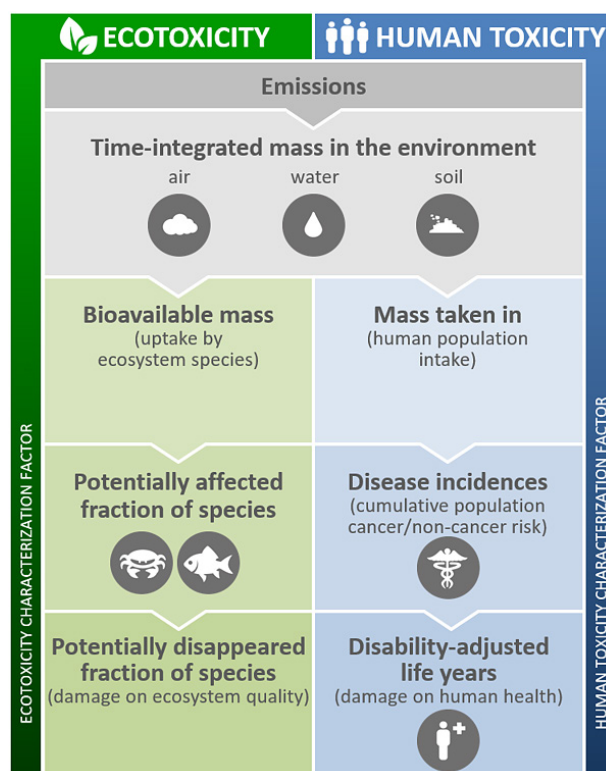
TC02 - Modelling Near-Field and Far-Field Human and Ecosystems Exposure and Impacts for Life-Cycle Assessment and Chemicals Prioritisation Based on the USEtox Consensus Model

Abstract

There is an increasing need for methods to assess impacts of toxic chemical emissions on human health and ecosystems including consumer exposure. This course provides a practical overview of multimedia chemical fate modelling, near-field and far-field multi-pathway human exposure modelling, ecosystem and human health effects dose-response modelling, and comparative indicators for human-toxicological and ecotoxicological impacts. Explaining basic concepts of environmental mass balance modelling including partitioning, first order cross-media transport, and persistence. It further introduce the concept of assessing multiple transfers between near-field and far-field environments and resulting exposures for consumers and the general population, discussing data and models available for detergents, building materials, food contact materials and personal care products.

Along a series of practical examples, the course illustrates how fate, exposure, effect and damage factors can be combined to construct factors to characterise chemical emissions and chemicals in consumer products, building on the USEtox scientific consensus model and USEtox-

compatible near-field models. It will conclude with a demonstration of how the models can be used in various applications, including the prioritisation and ranking of chemicals for regulatory purposes.



Objectives

Participants are introduced to the exposure science methods used in life-cycle and comparative risk assessments. The course is intended for environmental science practitioners interested in the scientific fundamentals of chemical impact assessment for a broad range of environmental emissions. Basic background knowledge of environmental modelling, risk assessment or life-cycle assessment is considered necessary.

Instructors

- Peter Fantke | *Technical University of Denmark*
- Olivier Jolliett | *University of Michigan*
- Thomas McKone | *University of California*

Time

Sunday, 3 May 2020 | 1 pm – 7 pm CEST