Mathematical Modelling Approaches to Understanding Environmental Fate and Behaviour of Flame Retardants (FRs)

Date and time: 23-24th of April 2012

Venue: IVL Swedish Environmental Research Institute, Valhallavägen 81, Stockholm

Program 23th April

Introduction, theory, concepts and simple fate modelling exercises

08.30-09.00 Registration and coffee

09.00-11.30
(including coffee break 10.00-10.20)

- An introduction to contaminant fate and transport models
- General principles of model design
- Different kinds of mass balances (equilibrium Level I to dynamic Level IV)
- Model inputs and outputs
- Model evaluation, sensitivity and uncertainty

11.30-12.30 Lunch

12.30-16.00
(including coffee break 14.30-14.50)

Following discussions students will model fate of BFRs and emerging FRs under guidance from course leaders. Students will select 3 contrasting substances and build fate profiles using a suite of evaluative modelling tools, as follows:

- Show how properties can be estimated with EPIWIN
- Fate calculations using Level I, II, III and IV
- Show LRT, persistence and bioaccumulation potential can be assessed with models

Program 24th April

Flame retardants and indoor models

08.30-09.00 Coffee

09.00-10.00
What do we know about model input data for FRs e.g. physical-chemical properties, emission rates, degradation rates etc. Include well-known BFRs and emerging FRs.

10.00-10.20 Coffee break

10.20-11.30
State-of-the-art in indoor fate modelling

11.30-12.30 Lunch

12.30-16.00
(including coffee break 14.30-14.50)

Hands-on exercise with an indoor fate model. Model contrasting chemicals indoors. What are the key indoor fate processes and what are the key model sensitivities and uncertainties? What is the contribution of indoor to outdoor environment? How can the model be improved?

Educators

Ian Cousins, Stockho,lm University
Matt MacLeod, Stockholm University
Anna Palm Cousins, IVL Swedish Environmental Research Institute
Miriam Diamond, University of Toronto

Information to participants

- Participants are to bring their own computer during both course days
- Contact sandra.delamotte@ivl.se in case of special request regarding food during the course