Advances in Exposure Modelling: Bridging the gap between research and application

Todd Gouin, Antonio Di Guardo

May 11, 11:05 - 12:45, Meeting Studio 313 & 315

Assessing environmental exposure of chemicals is a challenging, but critical part of performing an environmental risk assessment. Approaches to assess exposure include the use of monitoring data, often coupled with models, for chemicals that are in current use, or for chemicals not yet on the market, there is a heavy reliance on the use of exposure models to derive predicted environmental concentrations (PEC). There are various exposure models that can be utilized, and methods for deriving PECs can vary between regulatory bodies. For instance, in Europe differences in estimating PECs vary between general chemicals, regulated under REACH, plant protection products (PPP), as defined by the PPP regulation ((EC) No 1107/2009), and pharmaceuticals, regulated by the European Medicines Agency. Ultimately, it is important to ensure that exposure assessment is conducted in a manner that is transparent, robust, and takes into consideration the latest advances in scientific developments, while at the same time provides a reasonable level of conservativism, necessary to account for associated uncertainties and natural variance in the environment that might influence the reliability of PEC estimates. In this session, advances in exposure models that help to better quantify uncertainties associated with variance in environmental properties and emission scenarios used to strengthen confidence in PEC estimates are encouraged. A particular area of interest would be studies aimed at exploring opportunities for the development of harmonized approaches for assessing exposure between the different industry sector groups, and which build on the strengths of the various approaches. To this end, studies aimed at novel methods used towards improving estimates of emissions, developments in the handling of polar, ionized, and other chemicals with properties outside the applicability domain of existing exposure models, advances in tools aimed at integrating environmental fate models with ecological and/or effects models, either as screening-level or high-tiered tools are especially welcome.