

POP session

Conclusions

The aim of POP session is to continue the discussion of the policy-relevant science questions and to contribute to the preparatory work on the review of the POP Protocol. Presentations given at the session were devoted to overview of available POP measurement and emission data and to the current knowledge on modeling approaches for evaluation of POP intercontinental transport and source-receptor relationships.

The TF considered the above questions and came to the following conclusions:

1. There is well-documented evidence for the intercontinental and hemispheric transport of persistent organic pollutants (monitoring of POPs in the Arctic region, pilot modeling calculations, etc.).
2. Intercontinental transport of POPs is mainly determined by such processes as gas-particle partitioning, degradation, and gaseous exchange with underlying surface
3. Episodes of atmospheric intercontinental transport of POPs may involve advection within the boundary layer, and lifting into the free troposphere due to deep convection, orographic effects, and synoptic scale weather systems
4. Aerosol particles play an important role in the global transport of semi volatile POPs
5. Evaluation of POP intercontinental transport and source-receptor relationships on the basis of multi-compartment models can provide estimates of contribution of anthropogenic sources and historical emission to the pollution levels on hemispheric/global scale
6. Further development of nested hemispheric/regional scale models could improve estimates of intercontinental transport contribution to POP pollution levels on the regional scale.
7. Model intercomparison is an essential tool for validation of modeling of source-receptor relationships for POPs in addition to comparison with measurements

8. Knowledge on the sources and emissions are likely to remain among the least understood features with respect to the overall behavior and fate of many of POPs
9. For modeling of hemispheric transport to the Arctic region it is necessary to take into account specific climate conditions, transport with sea currents, snow scavenging, and accumulation of POPs in seawater, ice cover, and snow, etc.
10. At the moment global inventories of POP emissions and various measurement data for PCBs, HCB, and HCHs are available.

Future activities

1. Taking into account availability of global emissions and monitoring data for PCBs, HCB, and HCHs, it is recommended to focus intercontinental modeling activity on these POPs .
2. Passive sampling campaigns should be further developed to provide complementary information to high-volume air sampling of POPs
3. Collection and analysis of observed POP concentrations in air and other compartments (soil, seawater, freshwater, vegetation) from various international and national programs on hemispheric/global scale is required
4. Concurrent measurements of POPs in gaseous and particulate phases in the atmosphere and concentrations in other environmental compartments are needed to improve model description of processes relevant for POPs
5. POP hemispheric model intercomparison study needs further development.
6. Preparation and improvement of global emission inventories for POPs requires exchange of information on regular basis with UNEP Chemicals, GEIA and national programs