Invitation to the lecture of **Martin Scheringer** on

Long-range transport of organic chemicals in the environment

given on Wednesday **January 17th at 2.30 pm** at the RECETOX1 Lecture room (A29)
at the opportunity of his application for the full professorship at Masaryk University

Martin Scheringer
is a chemist by training and a research scientist at the Masaryk University in Brno and the Swiss Federal Institute of Technology (ETH) in Zurich. He has worked on the environmental fate and transport of chemicals for 25 years and has contributed to the development of a suite of environmental fate and transport models as well as pharmocokinetic models. His research interests are the long-range transport of chemicals in the environment; factors that determine environmental and human exposure to chemicals; and the societal and ethical context of chemical pollution. He is an Associate Editor of the Environmental Science & Technology journal (published by the American Chemical Society), a co-founder of the International Panel on Chemical Pollution which addresses the science-policy interface in the area of chemical pollution (www.ipcp.ch), and a contributing Lead Author to the chapter on Chemicals and Waste in UNEP's Global Environment Outlook, GEO-5.

Abstract
Chemicals such as solvents, plasticizers, flame retardants, impregnation agents, fragrances, UV filters, and many more are emitted to the environment from numerous applications in technical processes and in consumer products. In the environment, they undergo a wide range of processes including chemical and microbial transformation; transport with wind and water; and transfer between different environmental media (air, water, soil, vegetation, ice and snow, etc.). A key factor in these processes is a chemical's persistence, i.e. resistance to degradation. Chemicals that are sufficiently persistent (i.e., from weeks to years) undergo environmental long-range transport and may be found in ecosystems all over the world. This implies that human and environmental exposure to these chemicals is "exported" from the source regions to many other regions of the world and that adverse effects may occur in these regions, in particular in the long-term. This concern is addressed by the Stockholm Convention on Persistent Organic Pollutants (POPs), which uses persistence and long-range transport potential (LRTP) as two of four indicators to identify and regulate POPs at the global level (the other two indicators are bioaccumulation potential and toxicity). For many chemicals it is not straightforward to determine their persistence and LRTP. Measurements of chemical properties in the laboratory, measurements of chemical occurrence in remote regions, and mechanistic models of chemical fate and transport need to be combined in assessments of persistence and LRTP. Models serve as an "integrative" platform that makes it possible to systematically combine chemical property data and field data and to identify the most important uncertainties and data gaps. In addition to providing essential input to decision-making under the Stockholm Convention, models make it possible to mechanistically analyze the drivers of the environmental long-range transport of chemicals. The LRTP is an important indicator of environmental hazard because it demonstrates the extent to which remote regions may be exposed to chemicals without benefiting from their manufacture and use. The gap between regions who (mostly) benefit and regions who (mostly) carry the burden is an important problem of environmental justice.