

Isotopic techniques and their applications in environmental and food research

Co-convenors: Nives Ogrinc and David Heath

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The use of isotopic techniques is in the midst of a remarkable period of innovation and discovery; the last decade has seen the emergence of 'non traditional' stable isotopes of metals and new capabilities for measurements of organic compounds. These advances hold the potential to reveal new insights into the nature, sources and transformation processes of pollutants in the environment and their mobility in ecosystems, food and human health. The stable isotope composition of trace elements has emerged as a large, multi-faceted discipline that is perhaps the fastest growing tool at the moment.

This Satellite event deals with both traditional stable isotopes of light elements focusing on stable isotope composition of nitrogen and compound specific application of organic pollutants and non-traditional stable isotopes of trace elements such as Hg to determine the sources and transformation processes in the environment. It is intended to bring together leading researchers in this field and present the state-of-the-art including their own recent research.

This satellite event is co-organised as part of the MASSTWIN and ISO-FOOD projects and the International Conference on Chemistry and the Environment 2017 in Oslo, Norway. Its aim is to highlight recent advances in instrumentation and application in environment, food and health related research, and by doing so explore the opportunities and challenges ahead.

Program

10:00-10:30 Kay Knöller, Helmholtz Centre for Environmental Research, Halle/Saale, Germany

Nitrogen cycling and hydrology in catchments – Insights from stable isotope investigations

10:30-11:00 Holger Hintelmann, Trent University, Peterborough, Canada

The potential of measuring variations and fractionation of natural mercury isotope ratios in environmental studies

11:00-11:30 Dolores Hernandez, Instituto Nacional de Investigacion y Tecnologia Agraria y Alimentaria, Madrid, Spain

Screening of contaminants in bees and hive matrices by mass spectrometry based approaches

11:30-12:00 Coffee break

12:00-12:30 Martin Elsner, Helmholtz Zentrum München, München, Germany

Compound-specific Isotope Analysis (CSIA): Perspectives for Tracing (Bio)chemical Reactions in Complex Systems

12:30-13:00 Nives Ogrinc, Jožef Stefan Institute, Ljubljana, Slovenia

Compound specific analysis in environmental and food studies

13:30:14:00 Dimitra Lambropoulou, Aristotle University of Thessaloniki, Thessaloniki, Greece
Accurate determination of contaminants in environmental and food samples by chromatography coupled to isotope dilution mass spectrometry

14:00-15:00 Round Table Discussion