International Symposium on

Isotope Hydrology

Sustainable Water Resources in a Changing World

3–7 July 2023
IAEA Headquarters
Vienna, Austria

IAEA
International Atomic Energy Agency

BACKGROUND

The International Atomic Energy Agency (IAEA) has convened quadrennial symposia on isotope hydrology since 1963. In 2023 this symposium will celebrate 60 years of providing a unique opportunity to review the state-of-the-science, practical applications, and research trends and needs in isotope hydrology. Isotope hydrology contributes to a better understanding of the water cycle and has applications in water resources assessment and management, the study of past and future changes in the Earth's climate as well as of climate impacts on the water cycle, and in forensic areas such as ecological, wildlife and food source traceability. This edition is the 16th symposium in the series and will be held at the IAEA's Headquarters in Vienna, Austria. The symposium is aimed at facilitating the exchange of information and knowledge among water and environment professionals from developed and developing countries.

PURPOSE AND OBJECTIVES

The objectives of the symposium are to:

- review the basic principles of isotope hydrology in the light of the current state of knowledge;
- review recent developments in analytical instrumentation and applications of isotopes in water and climate studies;
- identify research, analytical and training requirements for a wider use of isotope hydrology; and
- identify particular focus areas where isotope hydrology can assist with acceleration of SDG6.

AUDIENCE

The symposium is aimed at professionals involved in a broad spectrum of disciplines, including water resource management, processes in the hydrosphere and atmosphere, climate change and its impact on the water cycle, environmental modelling, protection of the environment, geographical information systems, emergency response, and the development of isotopic techniques and tools. Government officials, including policy makers and individuals responsible for the assessment of environmental programmes, would also benefit from attending the symposium.

MAIN TOPICS

The symposium will cover the following topics related to the application of isotope hydrology for water resource management:

- Revisiting the role of tritium as a tracer in post-bomb hydrological cycle processes and groundwater systems
- Hydrosphere–atmosphere interactions including isotopic insights on meteorological extremes, convective rains and catchment runoff
- Assessing changes in the cryosphere and their impact on water sustainability and security
- Evaluating water quality, tracking contaminant sources and reaction pathways in different environmental systems including areas affected by mining and agricultural activities
- Application of isotope age tracers to evaluate sub-annual to 1 Ma water residence time
- New analytical developments, approaches, and tools in isotopologue ratio measurement and data quality
- Integrating isotope techniques with other advanced techniques such as big data from remote sensing or high-frequency sensors, advanced data analysis using geographic information systems, machine learning and/or modelling applications
- Isotopic reflections on water resources due to climate change including adaptation and mitigation approaches
- Enabling and strengthening science-based policies for water resource management
- Actions and activities that support capacity building and mainstreaming of gender equality in isotope hydrology projects.

KEY DEADLINES

30 January 2023 Deadline for submission of synopses together with the Form for Submission of a Paper (Form B) and the Participation Form (Form A) through the competent national authority using the InTouch+ Platform

30 January 2023 Deadline for submission of the Grant Application Form (Form C), together with Form A, through the competent national authority using the InTouch+ Platform

No deadline Registration only (no paper submission, no grant request) using Form A through the InTouch+ Platform.

REGISTRATION

No registration fee is charged.

The IAEA is generally not in a position to bear the travel and other costs of participants in the event. The IAEA has, however, limited funds at its disposal to help meet the cost of attendance of certain participants.

LANGUAGE

The working language of the symposium will be English.

CONTACT

Scientific Secretary:

Ms Jodie Miller

Division of Physical and Chemical Sciences

Department of Nuclear Sciences and Applications

Tel.: +43 1 2600 21735

Fax: +43 1 26007

Email: isih2023@iaea.org

Administration and organization:

Ms Nancy Herter

Division of Conference and Document Services

Department of Management

IAEA-CN-320; EVT2202898

Tel.: +43 1 2600 21315

Email: Conference.Contact-Point@iaea.org

CONFERENCE WEBPAGE

Please visit the IAEA conference web page regularly for new information regarding this conference.

https://www.iaea.org/events/isih2023

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CN-320

22-05562E