



IAEA

Atoms for Peace
and Development

International Symposium on Isotope Hydrology
Shaping the Future of Water: Tracers to Trends

IAEA Headquarters
Vienna, Austria

10–14 May 2027

Organized by the
International Atomic Energy Agency (IAEA)

Announcement and Call for Papers

A. Background

Since 1963, the International Atomic Energy Agency (IAEA) has organized quadrennial symposia focused on isotope hydrology. These gatherings serve as a valuable forum to examine scientific advancements, practical uses and emerging research directions and requirements in isotope hydrology. Isotope hydrology enhances understanding of the water cycle and is applied in the assessment and management of water resources, the processes that alter the hydrological cycle at a variety of spatial and temporal scales in natural systems, as well as forensic applications including ecological, wildlife and food source traceability. This edition marks the 17th event in the series and will take place at the IAEA's Headquarters in Vienna, Austria. The symposium aims to promote the exchange of information and expertise among water and environment professionals from both developed and developing nations.

B. 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 resource management;
- identify research, analytical and training requirements for a wider use of isotope hydrology;
- promote opportunities for Member States to participate in the GloWAL Network and advance the work of the Water Resources Programme [GloWAL Membership Portal - Home](#)
- identify particular focus areas where isotope hydrology can assist with meeting the goals of the Water Action Decade and the post 2030 Agenda.

C. Themes and Topics

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

1. **Low-Level Tritium Revival: High-Resolution Tracing of Recharge, Young Water Fractions, and Atmospheric Moisture Pathways** — Using modern low-level tritium measurements to track recent recharge, quantify young-water contributions and link precipitation/surface-water signals to atmospheric moisture sources and pathways.
2. **Cryosphere and High-Mountain Hydrology: Isotope Tools for Meltwater, Thaw and Glacier Retreat** — Applies isotopes to separate glacier/snow/permafrost contributions, understand meltwater routing and storage and assess how warming alters high-mountain water resources.
3. **Atmospheric–Hydrologic Coupling using Isotope-Enabled Models**— Using high-frequency isotope observations and synthetic precipitation data combined with isotope-enabled models to connect atmospheric processes to catchment responses and quantify baseflow and mixing dynamics.
4. **Isotopes in Water Quality** — Uses isotope tracers to diagnose pollution sources and transformation processes (e.g., nutrients, salinity, contaminants), evaluate rapid recharge processes and evolution of water quality along flowpaths including at the boundary between terrestrial and marine systems.

5. **Isotope Hydrology in Mining and hydrothermal water exploitation Contexts: Tracing Impacts, Managing Water and Supporting Closure** — Applies isotope tracers to distinguish mine-affected waters from natural background, quantify seepage and acid mine drainage processes, track tailings and pit-lake interactions and guide monitoring and mitigation strategies throughout operation and closure. Extends to hydrothermal water exploitation by using isotopes to identify fluid sources, recharge pathways, residence times, water–rock interaction and connectivity between deep geothermal systems and shallow groundwater.
6. **Quantification of Groundwater Age and Transit Times**— Applies isotopic tracer theory and modelling to estimate groundwater ages including through the use of ATTA, residence-time distributions and transit times that govern storage, buffering and contamination risk.
7. **Improving Understanding of Groundwater and Surface Water Systems and their Interactions** — Integrates multi-tracer evidence and modelling to better constrain the linkages between surface water and groundwater systems including in wetlands, lakes and rivers, as well as managed aquifer recharge (MAR) schemes, delineation of flowpaths, recharge/exchange processes and subsurface mixing that are otherwise difficult to observe directly, as well as using isotope tracers to improve understanding of geothermal systems.
8. **Analytical Innovations, Next-Generation Tracers and their Applications** — Focuses on new tracer methods and improved analytics (e.g., radionuclides, metal isotopes, laser approaches) that expand what hydrologists can measure and interpret in complex systems.
9. **Data Management and FAIR Isotope Hydrology: Standards, Metadata, Quality Assurance and Quality Control (QA/QC) and Reuse** — Focuses on robust data workflows—from harmonized formats and rich metadata to QA/QC, uncertainty reporting, data patching and FAIR reporting standards—so isotope datasets from labs and monitoring networks can be discoverable, interoperable and ready for modelling, synthesis and long-term decision support.
10. **AI and Machine Learning in Isotope Hydrology: From Interpretation to Prediction** — Explores how AI/ML can accelerate isotope-data interpretation, detect patterns/anomalies and improve predictive hydrological understanding while addressing explainability and data limitations.
11. **Building the Future: Capacity, Collaboration and Global Impact** — Centres on strengthening skills, laboratories, networks and partnerships so isotope hydrology methods and services can be adopted, sustained and scaled for practical impact.

D. Structure

The 2027 Symposium will have a diverse programme to facilitate communication on the latest scientific developments as well as opportunities for interactive discussions on key priorities in isotope hydrology and of the Water Resources Programme. The following will form the basis of the symposium programme:

1. An opening session consisting of welcoming addresses by representatives of the IAEA and cooperating organizations
2. Plenary sessions including keynote speakers
3. Scientific sessions consisting of oral presentations from the different themes/topics under Section C
4. Discussion sessions at the end of each major theme or topic

5. Information sessions on key priorities of the Water Resources Programme and other programmatic areas involved in transferring isotope hydrology to Member States
6. Poster sessions consisting of poster presentations including ample time for discussion and interaction with colleagues
7. Working Group discussions on important developments of the Isotope Hydrology Section
8. A closing session summarising the main conclusions of the symposium and closing remarks from the IAEA
9. Rapporteur summaries for all major sessions/themes
10. Side events relevant to isotope hydrology
11. An exhibition space to showcase analytical developments and instrumentation
12. An early career event to provide young scientists with career guidance and networking opportunities.

E. Expected Outcomes

The main technical conclusions and findings will help identify high-priority areas of work, and they will be taken into account when planning isotope hydrology activities to be delivered through the IAEA's Water Resources Programme. In addition to shaping the programme's near-term workplan, the outcomes will support evidence-based decisions on where targeted technical assistance, guidance and capacity building in isotope hydrology are likely to have the greatest impact in water resource management. These activities will contribute to the 2018–2028 UN Water Action Decade and the post 2030 Agenda by translating technical results into practical follow-up actions and sustained cooperation among Member States.

F. Target Audience

The symposium is aimed at professionals involved in a broad spectrum of disciplines, including water resource management, processes in the hydrosphere and atmosphere, hydrological 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.

G. Call for Papers

Contributions on the topics listed in Section C are welcome as oral or poster presentations. All submissions, apart from invited papers, must present original work, which has not been published elsewhere.

G.1. Submission of Extended Abstracts

Extended abstracts (approximately 400 to 500 words on one or a maximum of two A4 pages, may contain any charts, graphs, figures and references) should give enough information on the content of the proposed paper to enable the Programme Committee to evaluate it. Anyone wishing to present at the symposium must submit an extended abstract in electronic format using the symposium's file submission system ([IAEA-INDICO](#)), which is accessible from the symposium web page (see Section Q). The extended abstract can be submitted through this system until **11 September 2026**. Specifications for the layout will be available on IAEA-INDICO. The system for electronic submission of extended abstracts, IAEA-INDICO, is the sole mechanism for submission of contributed extended abstracts. Authors are encouraged to submit extended abstracts as early as possible. The IAEA will not accept submissions via email.

In addition, authors must register online using the InTouch+ platform (see Section H). The online registration together with the auto-generated Participation Form (Form A) and Form for Submission of a Paper (Form B) must reach the IAEA no later than **11 September 2026**.

IMPORTANT: The Programme Committee will consider uploaded extended abstracts only if these two forms have been received by the IAEA through the established official channels (see Section H).

G.2. Acceptance of Extended Abstracts

The Secretariat reserves the right to exclude extended abstracts that do not comply with its technical or scientific quality standards and that do not apply to one of the topics listed in Section C.

Authors will be informed by **09 October 2026** as to whether their submission has been accepted, either orally or as a poster, for presentation at the symposium.

Accepted contributions will also be reproduced in an unedited electronic compilation of extended abstracts which will be made available to all registered participants of the symposium.

G.3 Proceedings

Following the symposium, the IAEA will publish a summary report. The proceedings will be made available to read online.

H. Participation and Registration

All persons wishing to participate in the event must be designated by an IAEA Member State or should be a member of an organization that has been invited to attend. The list of invited organizations is available on the event web page (see Section Q).

Registration through the InTouch+ platform:

1. Access the InTouch+ platform (<https://intouchplus.iaea.org>):
 - Persons with an existing NUCLEUS account can [sign in here](#) with their username and password;
 - Persons without an existing NUCLEUS account can [register here](#).
2. Once signed in, prospective participants can use the InTouch+ platform to:

- Complete or update their personal details under ‘Basic Profile’ (if no financial support is requested) or under ‘Complete Profile’ (if financial support is requested) and upload the relevant supporting documents;
- Search for the relevant event (**EVT2502513**) under the ‘My Eligible Events’ tab;
- Select the Member State or invited organization they want to represent from the drop-down menu entitled ‘Designating authority’ (if an invited organization is not listed, please contact Conference.Contact-Point@iaea.org);
- If applicable, indicate whether a paper is being submitted and complete the relevant information;
- If applicable, indicate whether financial support is requested and complete the relevant information (this is not applicable to participants from invited organizations);
- Based on the data input, the InTouch+ platform will automatically generate Participation Form (Form A), Form for Submission of a Paper (Form B) and/or Grant Application Form (Form C);
- Submit their application.

Once submitted through the InTouch+ platform, the application together with the auto-generated form(s) will be transmitted automatically to the required authority for approval. If approved, the application together with the form(s) will automatically be sent to the IAEA through the online platform.

NOTE: Should prospective participants wish to submit a paper or request financial support, the application needs to be submitted by the specified deadlines (see section O).

For additional information on how to apply for an event, please refer to the [InTouch+ Help](#) page. Any other issues or queries related to InTouch+ can be sent to InTouchPlus.Contact-Point@iaea.org.

If it is not possible to submit the application through the InTouch+ platform, prospective participants are requested to contact the IAEA’s Conference Services Section via email: Conference.Contact-Point@iaea.org.

Participants are hereby informed that the personal data they submit will be processed in line with the [Agency’s Personal Data and Privacy Policy](#) and is collected solely for the purpose(s) of reviewing and assessing the application and to complete logistical arrangements where required. Further information can be found in the [Data Processing Notice](#) concerning IAEA InTouch+ platform.

I. Expenditures and Grants

No registration fee is charged to participants.

The IAEA is generally not in a position to bear the travel and other costs of participants in the conference. The IAEA has, however, limited funds at its disposal to help cover the cost of attendance of certain participants. Upon specific request, such assistance may be offered to normally one participant per country, provided that, in the IAEA’s view, the participant will make an important contribution to the conference.

If participants wish to apply for a grant, they should submit applications to the IAEA using the InTouch+ platform through their competent national authority (see Section H). Participants should ensure that applications for grants are submitted by **20 October 2026**.

Applications must be accompanied by Participation Form (Form A) and Grant Application Form (Form C) which are autogenerated in the InTouch+ platform.

For this event, the submission of an abstract (and Form B) is a requirement for applications for financial support.

Applications that do not comply with the above conditions cannot be considered.

Approved grants will be issued in the form of a lump sum payment that usually covers **only part of the cost of attendance**.

J. Distribution of Documents

A preliminary and final programme will be made available on the symposium web page (see Section Q) prior to the start of the conference. The electronic compilation of extended abstracts will be accessible free of charge to participants registered for the symposium.

K. Exhibitions

A limited amount of space will be available for commercial vendors' displays/exhibits during the symposium. Interested parties should contact the Scientific Secretariat by email at isih2027@iaea.org by **10 January 2027**.

L. Working Language

The working language of the symposium will be English. All communications must be sent to the IAEA in English.

M. Venue and Accommodation

The symposium will be held at the Vienna International Centre (VIC), where the IAEA's Headquarters are located. Participants are advised to arrive at Checkpoint 1/Gate 1 of the VIC one hour before the start of the event on the first day in order to allow for timely registration. Participants will need to present an official photo identification document in order to be admitted to the VIC premises.

Participants must make their own travel and accommodation arrangements. Hotels offering a reduced rate for participants are listed on <https://www.iaea.org/events>. Please note that the IAEA is not in a position to assist participants with hotel bookings, nor can the IAEA assume responsibility for paying fees for cancellations, re-bookings and no-shows.

N. Visas

Participants who require a visa to enter Austria should submit the necessary application to the nearest diplomatic or consular representative of Austria as early as three months but not later than four weeks before they travel to Austria. Since Austria is a Schengen State, persons requiring a visa will have to

apply for a Schengen visa. In States where Austria has no diplomatic mission, visas can be obtained from the consular authority of a Schengen Partner State representing Austria in the country in question.

For more information, please see the Austria Visa Information document available on <https://www.iaea.org/events>.

O. Key Deadlines and Dates

Submission of extended abstracts through IAEA-INDICO	11 September 2026
Submission of Form B (together with Form A) through the InTouch+ platform	11 September 2026
Notification of acceptance of extended abstracts for oral or poster presentation	9 October 2026
Submission of Form C (together with Form A) through the InTouch+ platform	20 October 2026
Submission of Form A only (no paper submission, no grant request) through the InTouch+ platform	4 May 2027

P. Symposium Secretariat

General Postal Address and Contact Details of the IAEA:

International Atomic Energy Agency
Vienna International Centre
PO Box 100
1400 VIENNA
AUSTRIA
Tel.: +43 1 2600
Fax: +43 1 2600 2007
Email: Official.Mail@iaea.org

Scientific Secretary of the Symposium:

Ms Jodie Miller
Division of Physical and Chemical Sciences
Department of Nuclear Sciences and Applications
Tel.: +43 1 2600 21735
Email: isih2027@iaea.org

Administration and Organization:

Ms Nancy Herter

Conference Services Section

Division of Conference and Document Services

Department of Management

IAEA-CN-351; EVT2502513

Tel.: +43 1 2600 21315

Email: Conference.Contact-Point@iaea.org

Subsequent correspondence on scientific matters should be sent to the Scientific Secretary and correspondence on administrative matters to the IAEA's Conference Services Section.

Q.Symposium Web Page

Please visit the IAEA symposium [web page](#) regularly for new information regarding this symposium.