Regional Training Course

Nitrate Isotopes Analysis and Applications

Hosted by

The Government of the Czech Republic

through the

Biology Centre CAS

In Ceske Budejovice, Czech Republic

1-5 December 2025

Ref. No.: TN-TC-RER7017-EVT2504569

Information Sheet

Purpose

This training offers participants practical and theoretical parts, allowing them to enhance their knowledge and develop skills in nitrate isotopes analysis and applications in the isotope hydrology. Nitrate isotope analysis is a powerful tool in environmental science, particularly for understanding nitrogen cycling and identifying pollution sources. Nitrogen and oxygen isotopes in nitrate can be used to trace the origin and transformation processes of nitrate in water. Particularly, they are applied for distinguishing between natural sources (e.g., soil organic matter, atmospheric deposition) and anthropogenic inputs (e.g., fertilizers, wastewater, animal waste). One key application is in groundwater and surface water studies, where nitrate contamination poses risks to ecosystems and human health that enables to develop targeted mitigation strategies. It also aids in evaluating denitrification processes, which naturally reduce nitrate levels and can be influenced by land use and climate.

Working Language(s)

The working language(s) of the event will be English.

Deadline for Nominations

Nominations received after **30 September 2025** will not be considered.

Project Background

The project builds on the achievements of RER7013, "Evaluating Groundwater Resources and Groundwater-Surface-Water Interactions in the Context of Adapting to Climate Change", which provided a first overview of groundwater and surface water resources, including transboundary water resources, in 27 participating Member States and sought to improve the capacity and self-reliance of participating Member States to introduce isotope hydrology in water resources planning, management, and development at national and transboundary levels. The phase two project seeks to increase coverage and capacity of the regional network in the European TC (TCEU) region, which was consolidated during RER7013, for the monitoring and evaluation of water resource quality and quantity using isotope techniques. In order to promote greater regional cooperation, the project continues to encourage participating countries to work together to improve the characterization of shared aquifers, address identified data gaps and facilitate the use of isotope hydrology for the formulation of water-related policies. This third aspect is outlined as a new component of the project, given the need and interest of several participating countries. Ultimately, the project aims to enhance evidence-based decision-making for integrated water management to improve water security in Member States of Europe and Central Asia.

Scope and Nature

The aim of the training course is to develop theoretical and practical knowledge in isotope hydrology to a concrete project. Participants will get skills that can be used to apply nitrate isotopes and develop the relevant case studies during the project implementation. The objectives are as follows:

a. Get theoretical knowledge on the nitrate isotopes application.

b. Learn the sampling protocols on nitrate isotopes and other additional parameters in water.

c. Improve skills on the development of the studies that include nitrate isotopes.

d. Be trained on samples preparation for the nitrate isotopes analysis in water.

e. Overview analytical methods for the nitrate isotopes analysis in water.

Participants' Qualifications and Experience

Participants should have a diploma with a technical/scientific profile that attests to the experience with the use of hydrological, hydrogeological or hydrochemical techniques, and/or their involvement in water resources monitoring, assessment and/or management. They should preferably have a good understanding of water-related/hydrogeological issues.

As the course will be conducted in English language, participants should have sufficient English language proficiency to follow the training and express themselves without difficulty.

Application Procedure

Candidates wishing to apply for this training should follow the steps below:

1. Access the IAEA TALEO page (https://iaea.taleo.net/careersection/ex/jobsearch.ftl) and complete the Candidate Profile.

2. Be registered on the Nucleus page of the IAEA (https://nucleus.iaea.org/).

3. Through Nucleus, access the InTouch+ platform where the Profile is completed (My Profile tab) (https://nucleus.iaea.org/Pages/InTouchPlus.aspx).
   NOTE: The email used for TALEO and Nucleus must be the same. If not, the candidate's profile will not appear complete.

4. On the InTouch + platform, under the 'My InTouch +' tab, the candidate needs to:
   a. select the institute / organization that he/she works at / represents ('My Institute' section);
   b. click on the link called **'Refresh Personal History Form'** to update the system, ***otherwise the nominations submitted will have these fields empty and it will not be possible to evaluate***

them during the selection of candidates ('IAEA Recruitment Platform' section).

NOTE: Once the above steps are finalized, the candidate's profile will appear as completed and he/she can apply for Technical Cooperation events.

5. In the InTouch+ platform (https://intouchplus.iaea.org), in the 'Applications' tab, search by the event number provided in the invitation.

   Help for each step is located at the top of the page. For additional help on how to register, create a profile and apply for an event, please refer to the online guide and training videos available under the following links: how-to guide and training videos. Any issues or queries related to the new system can be addressed to InTouchPlus.Contact-Point@iaea.org or TC-AIPS-PL4.Contact-point@iaea.org.

Alternately, applicants may download the Nomination Form for the TN from the IAEA website https://www.iaea.org/services/technical-cooperation-programme/how-to-participate.

Applications must contain sufficient information to establish that the nominees have the required qualifications. Please note that the information regarding LANGUAGE SKILLS, EDUCATION AND WORK EXPERIENCE is exported from TALEO. If an applicant's profile in TALEO is not updated, the information in INTOUCH+ for these sections appears as empty and the candidates cannot be evaluated. Completed applications need to be endorsed by the relevant national authority, i.e. the National Liaison Office and submitted through the established official channels.

Administrative and Financial Arrangements

Nominating authorities will be duly informed of the names of the candidates who have been selected and will at that time be informed of the procedure to be followed with regard to administrative and financial matters.

Selected participants will receive an allowance from the IAEA to cover their costs of travel, lodging, daily subsistence and miscellaneous expenses. They will receive either a round-trip air ticket based on the most direct and economical route between the airport nearest their residence and the airport nearest the duty station through the IAEA's travel agency American Express, or a travel grant, or they will be reimbursed travel by car/bus/train in accordance with IAEA rules for non-staff travel.

Disclaimer of Liability

The organizers of the event do not accept liability for the payment of any cost or compensation that may arise from damage to or loss of personal property, or from illness, injury, disability or death of a participant while he/she is travelling to and from or attending the course, and it is clearly understood that each Government, in approving his/her participation, undertakes responsibility for such coverage. Governments would be well advised to take out insurance against these risks.

Note for female participants

Any woman engaged by the IAEA for work or training should notify the IAEA that she is pregnant.

The Board of Governors of the IAEA approved new International Basic Safety Standards for Protection against Ionizing Radiation and for the Safety of Radiation Sources. The Standards deal specifically with the occupational exposure conditions of female workers by requiring, inter alia, that a female worker should, on becoming aware that she is pregnant, notify her employer in order that her working conditions may be modified, if necessary. This notification shall not be considered a reason to exclude her from work; however, her working conditions, with respect to occupational exposure shall be adapted with a view to ensuring that her embryo or foetus be afforded the same broad level of protection as required for members of the public.

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