



**IAEA PUBLICATIONS IN THE FIELD OF
ISOTOPE HYDROLOGY
AND IN ALLIED FIELDS**

**International Atomic Energy Agency
Isotope Hydrology Section**

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IAEA PUBLICATIONS IN THE FIELD OF ISOTOPE HYDROLOGY AND IN ALLIED FIELDS

PRICED PUBLICATIONS

Application of Isotope Techniques in Hydrology

STI/DOC/10/11

A comprehensive report from the panel on Application of Isotope Techniques in Hydrology
Vienna, 1962, 31 pages. Out of print.

Isotope Techniques for Hydrology

STI/DOC/10/23

Report of a Panel on the Use of Isotopes in Hydrology
Vienna, 1964, 36 pages. Out of print.

Isotopes in Hydrology

STI/PUB/141

Proceedings of a symposium held in Vienna, November 13-18, 1966.

42 papers on: Hydrometeorology, stream flow measurements (7), sediment studies (10), geochronology and environmental studies (1), aquifer characteristics (5), unsaturated zone, seepage, tracer technology (6), surface water, limnology, glaciology (4).

Studies and applications are reported for the following countries: Antarctica, Australia, Austria, Congo, Federal Republic of Germany, France, Hungary, Iceland, Israel, the Netherlands, New Zealand, United Kingdom, United States of America, Union of Soviet Socialist Republics, Venezuela, Yugoslavia.

Vienna, 1967, 740 pages. Out of print.

Radioactive Dating and Methods of Low-level Counting

STI/PUB/152

Proceedings of a symposium held in Monaco, March 2-10, 1967.

58 papers on: Geochemistry and cosmochemistry of radiocarbon (9), radiocarbon dating and dating by cosmic ray-produced isotopes (8), study of meteorites (8), dating by primeval isotopes (19), low-level gas counting and tritium enrichment (8), low-level counting with scintillation and solid state detectors (6).

Studies and applications are reported for the following countries and regions: Africa (Lake Victoria), the Alps, Antarctica, Argentina, Atlantic Ocean, Austria, Belgium, Denmark, Federal Republic of Germany, France, India, Japan, Pacific Ocean, Poland, South Africa, Sweden, Switzerland, United Kingdom, United States of America, the whole world.

Vienna, 1967, 744 pages. Out of print.

Isotope and Radiation Techniques in Soil Physics and Irrigation Studies

STI/PUB/158

Proceedings of symposium held in Istanbul, 12-16 June 1967, jointly organized by the IAEA and FAO
Vienna, 1967. 446 pages.

Isotope Hydrology 1970

STI/PUB/255

Proceedings of a symposium held in Vienna, March 9-13, 1970.

54 papers on : Environmental isotopes in the water cycle (13), problems on carbon-14 dating of groundwater (5), field studies using environmental isotope techniques (8), tracer techniques (7), sediment studies (3), borehole techniques and nuclear instruments (6), leakage from reservoirs and canals (4), computational studies (3), new techniques in tracing and dating (5).

Studies and applications are reported for the following countries and regions: Algeria, Argentina, Austria, Canada, Central Europe (the Alps), Chad, Czechoslovakia, Federal Republic of Germany, France, Iceland, India, Israel, Italy, the Netherlands, Norway, Panama, South Africa, Spain, Switzerland, Turkey, United Kingdom, United States of America, Union of Soviet Socialist Republics, Venezuela, Yugoslavia.

Vienna, 1970, 918 pages. Out of print.

Nuclear Well Logging in Hydrology

STI/DOC/10/126

Prepared by the Working Group on Nuclear Techniques in Hydrology of the International Hydrological Decade (IHD).

Introduction (6 chapters), logging methods (4 chapters), applications and interpretation of results (3 chapters), conclusions and recommendations.

Nuclear logging was adopted and developed by the petroleum industry for use in exploration and development work. This book shows that nuclear logging may also be useful in hydrology.

Vienna, 1971, 90 pages.

Tracer Techniques in Sediment Transport

STI/DOC/10/145

Proceedings of the Panel Meeting held in Saclay, France, June 21-25, 1971.

This book gives a comprehensive appraisal of the principles and applications of tracer techniques used in sediment transport studies.

General (2), conventional sedimentology (5), artificial radioactive tracers (3), fluorescent tracers (2), activatable tracers (2), natural radioactive tracers (1), nuclear instruments (2), health and safety (1).

Studies and applications are reported for the following countries: Belgium, France, United Kingdom, United States of America and others.

Vienna, 1973, 234 pages.

Soil Moisture and Irrigation Studies II

STI/PUB/327

Proceedings of a Panel Meeting held in Vienna, November 2-6, 1970.

13 papers: Introduction (1), measurement of water in soil using radiation techniques (5), solutes in the soil-water system (2), field water balance and plant response (3), proposals (2).

Studies and applications are reported for the following countries: Austria, France, United States of America, Union of Soviet Socialist Republics.

Vienna, 1973, 189 pages.

Isotope Techniques in Groundwater Hydrology 1974

STI/PUB/373

Proceedings of a symposium held in Vienna, March 11-15, 1974.

51 papers on: Groundwater recharge (7), interrelation between groundwater and surface water (4), field studies with environmental isotopes (16), geothermal waters (2), problems in using environmental isotopes for groundwater studies (5), environmental isotopes other than hydrogen, oxygen and carbon (5), aquifer characteristics studies (7), theoretical and experimental studies of tracer movement (5).

Studies and applications were carried out in the following countries: Algeria, Australia, Botswana,

Brazil, Canada, Denmark, Federal Republic of Germany, Greece, Hungary, Israel, Italy, Kenya, Libya, the Netherlands, New Zealand, Nicaragua, Poland, Saudi Arabia, Senegal, South Africa, Swaziland, Sweden, Switzerland, United States of America, Union of Soviet Socialist Republics, Yugoslavia.

Vienna, 1974. Two volumes of 504 and 500 pages. Out of print.

Isotope Ratios as Pollutant Source and Behaviour Indicators

STI/PUB/382

Proceedings of a symposium held in Vienna, November 18-22, 1974.

34 papers on: Stable isotope ratios as pollutant source and behaviour indicator (8), radioactive isotope ratios as pollutant source and behaviour indicator (12), preparation and use of enriched or depleted stable isotopes for pollutant tracer studies (12), variations in natural $^{15}\text{N}/^{14}\text{N}$ isotope ratios with particular reference to fertilizer behaviour (2).

Studies and applications are reported for the following countries: Belgium, Canada, Federal Republic of Germany, France, India, Italy, United Kingdom, United States of America, Union of Soviet Socialist Republics, whole world.

Vienna, 1975, 489 pages.

Impacts of Nuclear Releases into the Aquatic Environment

STI/PUB/406

Proceedings of a Symposium held in Otaniemi, 30 June - 4 July 1975

Vienna, 1974. 526 pages. Out of print.

Nuclear Techniques in Geochemistry and Geophysics

STI/PUB/425

Proceedings of a Panel Meeting held in Vienna, November 25-29, 1974.

19 papers on: Logging (6), instrumentation and methodology (9), isotope ratios (1), comparison between nuclear and non-nuclear techniques (1), standardization and calibration (2).

Studies and applications are reported for the following countries: Australia, Federal Republic of Germany, Greenland, Poland, Sweden, United Kingdom, United States of America, Union of Soviet Socialist Republics.

Vienna, 1976, 271 pages.

Interpretation of Environmental Isotope and Hydrochemical Data in Groundwater Hydrology

STI/PUB/429

Proceedings of an Advisory Group Meeting held in Vienna, January 27-31, 1975.

13 papers on: Reviews (4), case studies (6), interpretation of carbon-14 ages (3).

Studies and applications are reported for the following countries: Canada, Canary Islands, India, Israel, Italy, United States of America.

Vienna, 1976, 230 pages. Out of print.

Isotope Hydrology 1978

STI/PUB/493

Proceedings of a symposium held in Neuherberg, June 19-23, 1978.

46 papers on: Interrelations between surface water and groundwater (2), isotope studies in mining hydrology and civil engineering (4), origin of groundwater and aquifer characteristics (5), regional investigations (5), groundwater in fissured and fractured rocks (5), groundwater in arid zones and palaeowaters (6), geothermal waters (2), geochemical interpretation of isotopic data (4), groundwater recharge studies - unsaturated zone (6), surface waters (3), progress and innovation in isotope hydrology (4).

Studies and applications in the following countries and regions: Northern Africa, Australia, Austria, Botswana, Brazil, Canada, Chile, Colombia, Czechoslovakia, Ecuador, Central Europe, France,

Federal Republic of Germany, India, Italy, Mexico, Morocco, Poland, Qatar, Saudi Arabia, South Africa, Spain, Switzerland, United Kingdom, United States of America, Yugoslavia, Zambia. Vienna, 1979. Two volumes of 984 pages.

Behaviour of Tritium in the Environment

STI/PUB/498

Proceedings of a symposium held in San Francisco, October 16-20, 1978.

50 papers on: Distribution of tritium (7), evaluation of future discharges (3), measurement of tritium (3), tritium in the aquatic environment (10), tritium in the terrestrial environment (13), tritium in man (8), monitoring of tritium (6).

Studies and applications are reported for the following countries and regions: Antarctica, Atlantic Ocean, Belgium, Canada, Central Europe, Finland, France, India, Japan, Mexico, the Netherlands, Philippines, Sweden, Switzerland, Thailand, United Kingdom, United States of America.

Vienna, 1979, 711 pages.

Isotopes in Lake Studies

STI/PUB/511

Proceedings of an Advisory Group Meeting held in Vienna, August 29 - September 2, 1977.

27 papers or extended synopses on: lake water balance (12), lake water dynamics (7), saline lakes (2), gas exchange with atmosphere (3), lake sediments (3).

Studies and applications in lakes in the following countries: Australia, Austria (Lake Neusiedl), Bolivia (Lake Titicaca), Brazil, Canada, Djibouti (Lake Asal), Democratic Republic of Germany (Lake Schwerin), Federal Republic of Germany (Lake Constance and other small lakes), Israel (Lake Kinneret), Japan (Hakone Caldera), Malawi (Lake Malawi), Nigeria (Lake Kainji), Switzerland, United States of America (Lake Tahoe and others).

Vienna, 1979, 290 pages. Out of print.

Nuclear Techniques in Groundwater Pollution Research

STI/PUB/518

Proceedings of an Advisory Group Meeting held in Cracow, December 6-9, 1976.

17 papers on: Problems and case studies in groundwater pollution (8), analysis of pollutants by nuclear techniques (4), prediction and analysis of the movement of groundwater pollutants by nuclear tracer techniques (5).

Studies and applications are reported for the following countries: Canada, Denmark, Federal Republic of Germany, Poland, United Kingdom, Union of Soviet Socialist Republics.

Vienna, 1980, 285 pages. Out of print.

Arid Zone Hydrology: Investigations with Isotope Techniques

STI/PUB/547

Proceedings of an Advisory Group Meeting held in Vienna, November 6-9, 1978.

17 papers on: Groundwater recharge studies (9), groundwater origin and flow patterns (8), studies and applications in the following countries: Australia, Brazil, Chad, Cyprus, Djibouti, India, Israel, Jordan, Libya, Mexico, Saudi Arabia.

Vienna, 1980, 265 pages.

Statistical Treatment of Environmental Isotope Data in Precipitation

STI/DOC/10/206

All the available data on isotopic content of precipitation have been statistically treated to obtain for each station the yearly tritium and stable isotope mean contents, the monthly weighted means and the long-term means for stable isotopes, the correlation of the tritium content with the reference station (Ottawa for the northern hemisphere and Pretoria for the southern hemisphere) and the correlation of

the stable isotope content with monthly temperature and precipitation.
Vienna, 1981.

Stable Isotope Hydrology: Deuterium and Oxygen-18 in the Water Cycle

STI/DOC/10/210

This monograph was prepared under the aegis of the IAEA/UNESCO Working Group on Nuclear Techniques in Hydrology of the International Hydrological Programme.

Contents: 1. Historical introduction. 2. Properties of the isotopic species of water: the "isotope effects". 3. Isotope fractionation. 4. The w -notation and mass-spectrometric measurement techniques. 5. Review of the natural abundance of hydrogen and oxygen isotopes. 6. Atmospheric water. 7. Ice and snow hydrology. 8. River waters. 9. Lakes. 10. Groundwater. 11. Geothermal waters. 12. Palaeowaters. 13. Practical applications of stable isotopes to hydrological problems.

Vienna, 1981, 340 pages.

Methods of Low-Level Counting and Spectrometry

STI/PUB/592

Proceedings of a symposium held in Berlin (West), April 6-10, 1981.

40 papers on: Gamma spectrometry, instrumentations and applications (5), gamma spectrometry and low-level alpha and beta counting (12), detection of actinides and ^{99}Tc (6), tritium enrichment and counting (4), radiocarbon counting (4), accelerator-based techniques and measurement of radioactive noble gases (4), development of new methods for low-level measurements (5).

Vienna, 1981, 558 pages. Out of print.

Palaeoclimates and Palaeowaters: A Collection of Environmental Isotope Studies

STI/PUB/621

Proceedings of an Advisory Group Meeting held in Vienna, November 25-28, 1980.

13 papers and 3 extended synopses on: Isotopic composition of natural waters and climate (6), isotopic composition of organic substances (3), isotopic composition of sediments (4), isotopic composition of palaeogroundwaters (3).

Vienna, 1983, 207 pages.

Guidebook on Nuclear Techniques in Hydrology. 1983 Edition.

STI/DOC/10/91/2

The first edition of the Guidebook was published in 1968. Since that time, great progress has been made in nuclear techniques and their application to hydrology, and to hydrology itself. As part of the International Hydrological Programme, it was decided to rewrite this Guidebook.

Contents: 1. Introduction. 2. Stable isotopes in precipitation. 3. Water equivalent of snow cover. 4. Snow pack and glacier studies. 5. Streamflow measurements. 6. Runoff analysis. 7. Dispersion in surface waters. 8. Suspended sediment. 8. Suspended sediment. 9. Bedload transport. 10. Lake dynamics. 11. Sedimentation in lakes and reservoirs. 12. Leakage from lakes and reservoirs. 13. Soil moisture content. 14. Soil density. 15. Moisture movement in the unsaturated zone. 16. Aquifer characteristics. 17. Stratigraphy of aquifers. 18. Origin of groundwater. 19. Dating of groundwater. 20. Interaction of surface water with groundwater. 21. Leakage between aquifers. 22. Groundwater in fractured rocks. 23. Groundwater salinization. 24. Geothermal systems. 25. Models for tracer data analysis. 26. Isotope techniques in civil engineering. 27. Isotopes as pollution tracers. 28. Disposal and storage of waste.

Vienna, 1983, 439 pages.

Isotope Techniques in the Hydrogeological Assessment of Potential Sites for the Disposal of High-level Radioactive Waste

STI/DOC/10/228

Technical Report. Contents: 1. Introduction. 2. General scope of the report. 3. Water and tracer movement in the aquifer. 4. Chemical evolution along groundwater flow paths. 5. Description of isotope techniques. 6. Stable isotopes of hydrogen and oxygen. 7. Tritium. 8. Isotope evolution of aqueous systems. 9. Isotope evolution of dissolved noble gases. 10. Other radioisotopes of cosmic origin. 11. Uranium series nuclides. 12. Radioisotope tracers and other nuclear methods. 13. Conclusions.
Vienna, 1983, 151 pages.

Isotope Hydrology 1983

STI/PUB/650

Proceedings of a symposium held in Vienna, 12-16 September 1983.

41 papers on: Environmental isotopes in precipitation and surface water studies (5), studies in the unsaturated zone (4), field studies of groundwater dynamics with environmental isotopes (16), groundwater age determination and related problems (6), groundwater pollution studies (1), theories and models to interpret isotopic data (2), artificial isotope applications (7). 30 extended abstracts of poster presentations.

Studies and applications in the following countries and regions: Australia, Austria, Belgium, Brazil, Canada, Colombia, Egypt, Finland, France, German Democratic Republic, Federal Republic of Germany, India, Israel, Italy, Republic of Korea, Mali, Mexico, Niger, Poland, Romania, Sahara Desert, Senegal, Singapore, South Africa, Spain, Sudan, Sweden, Switzerland, Tanzania, United Kingdom, Union of Soviet Socialist Republics.

Vienna, 1984, 873 pages.

Studies on Sulphur Isotope Variations in Nature

STI/PUB/747

Proceedings of an Advisory Group Meeting held in Vienna, 17-20 June 1983.

10 papers on various aspects of sulphur isotope geochemistry.

Vienna, 1987, 124 pages.

Isotope Techniques in Water Resources Evaluation

STI/PUB/757

Proceedings of a Symposium held in Vienna, 30 March - 3 April 1987.

41 papers on: Thermal water studies (3), groundwater dating (5), hydrology of arid and semi-arid areas (6), field studies with environmental isotopes (4), precipitation-surface-groundwater relationships and pollution (6), artificial tracers (3), sediment transport (4). 40 extended abstracts of poster presentations.

Studies and applications in the following countries and regions: Antarctica, Argentina, Austria, Belgium, Bolivia, Botswana, Brazil, Burkina Faso, Canada, Chile, China, Colombia, Ivory Coast, Czechoslovakia, Dominican Republic, Egypt, Finland, France, Federal Republic of Germany, Haiti, Hungary, India, Israel, Italy, Malaysia, Mali, Nepal, New Zealand, Niger, Oman, Pakistan, Poland, Romania, Sudan, Sweden, Switzerland, United States of America.

Vienna, 1987, 815 pages.

Isotope Techniques in the Study of the Hydrology of Fractured and Fissured Rocks

STI/PUB/790

Proceedings of an Advisory Group Meeting held in Vienna, 17-21 November 1986.

13 papers on general considerations of the hydrology of fractured rock aquifers (4), groundwater characteristics in carbonate rocks (5), on the use of tracers in fissured rocks (3), mathematical models for interpreting tracer experiments in fissured aquifers (1).

Studies and applications in the following countries: Austria, Federal Republic of Germany, Greece, Italy, Spain, Sweden, United Kingdom.

Vienna, 1989, 306 pages.

Environmental Isotope Data No. 1 - No. 10: World Survey of Isotope Concentration in Precipitation

In order to serve hydrologists, hydrogeologists and other scientists the world over, IAEA regularly publishes isotope data of precipitation.

The collection of precipitation samples is carried out by the meteorological services of 70 countries and territories.

These books contain the meteorological data (amount of precipitation, humidity, mean air temperature), tritium concentration and stable isotope composition (deuterium and oxygen-18).

No. 1 (STI/DOC/10/96)	1953-1963, 421 pages, published in 1969
No. 2 (STI/DOC/10/117)	1964-1965, 404 pages, published in 1970
No. 3 (STI/DOC/10/129)	1966-1967, 421 pages, published in 1971
No. 4 (STI/DOC/10/147)	1968-1969, 404 pages, published in 1973
No. 5 (STI/DOC/10/165)	1970-1971, 421 pages, published in 1975
No. 6 (STI/DOC/10/192)	1972-1975, 404 pages, published in 1979
No. 7 (STI/DOC/10/226)	1976-1979, 421 pages, published in 1983
No. 8 (STI/DOC/10/264)	1980-1983, 404 pages, published in 1986
No. 9 (STI/DOC/10/311)	1984-1987, 188 pages, published in 1990
No. 10 (STI/DOC/10/371)	1988-1991, 214 pages, published in 1994

Isotope Techniques in Water Resources Development 1991

STI/PUB/875

Proceedings of a Symposium held in Vienna, 11-15 March 1991

37 papers on: Interface processes between the atmosphere and the hydrosphere (2), surface water and sediment (6), groundwater dating: problems and new approaches (12), groundwater field studies (6), environmental problems and water pollution (5), palaeohydrology and palaeoclimatology (6).

47 extended abstracts of poster presentations.

Studies and applications in the following countries and regions: Albania, Australia, Austria, Botswana, Brazil, Canada, Colombia, China, Czech and Slovak Federal Republic, Dominican Republic, Egypt, Finland, France, Germany, Hungary, Indonesia, Israel, Italy, Jordan, Republic of Korea, Mali, Niger, Pakistan, Portugal, Romania, Russian Federation, Senegal, Slovenia, Spain, Sri Lanka, Sudan, Switzerland, Thailand, Turkey, Viet Nam, Western Africa, Yugoslavia.

Vienna, 1992, 790 pages.

Statistical Treatment of Data on Environmental Isotopes in Precipitation

STI/DOC/10/331

This publication is an extended and revised version of Technical Reports Series No. 206, published in 1981. It contains a statistical evaluation of monthly isotope and meteorological data accumulated during three decades of operation of the global network "Isotopes in Precipitation" operated jointly by the IAEA and WMO. For each of the 180 stations selected for statistical treatment, numerical data and graphs are presented, illustrating the most characteristic features of the accumulated isotope database.

Vienna, 1992, 781 pages.

Isotopes of Noble Gases as Tracers in Environmental Studies

STI/PUB/859

Proceedings of a Consultants' Meeting held in Vienna, 29 May - 2 June 1989.

17 papers reviewing the current status of applications of noble gas isotopes in environmental studies related to transport and mixing processes in the atmosphere and the ocean, determining age, origin, and groundwater flow, rock-water interactions, palaeoclimatological research, and precursors of

earthquakes and volcanic eruptions.
Vienna, 1992, 305 pages. Out of print.

Isotope Techniques in the Study of Past and Current Environmental Changes in the Hydrosphere and the Atmosphere

STI/PUB/908

Proceedings of a Symposium held in Vienna, 19-23 April 1993.

33 papers on: Isotopes in atmospheric studies (6), isotopes in the soil-plants-atmosphere system (5), degradation of water resources (5), palaeohydrology and palaeowaters (10), isotope indicators of climatic changes (7). 37 extended abstracts of poster presentations.

Studies and applications in the following countries and regions: Antarctica, Austria, Bolivia, Brazil, Canada, Central Europe, China, Croatia, Cuba, Czechoslovakia, Egypt, France, Germany, India, Israel, Japan, Jordan, Kenya, Madagascar, New Zealand, North Atlantic Ocean, Pakistan, Poland, Portugal, Romania, Russian Federation, Sahara Desert and Sahel, Senegal, Spain, Switzerland, Syria, Tunisia, Turkey, United Kingdom, United States of America, Uzbekistan, Viet Nam.

Vienna, 1993, 624 pages.

Isotopes in Water Resources Management

STI/PUB/970

Proceedings of a Symposium held in Vienna in cooperation with UNESCO, 20-24 March 1995.

43 papers on: Groundwater resources management, with emphasis on origin and recharge of groundwater; groundwater dynamics and pollution; modelling approaches; geothermal and palaeowater resources; surface water and sediments; unsaturated zone; methodological developments. 100 extended abstracts of poster presentations.

Studies and applications in the following countries and regions: Albania, Algeria, Australia, Austria, Belgium, Botswana, Brazil, Canada, Caspian Sea, Chad, China, Croatia, Czech Republic, Egypt, Ethiopia, Finland, France, Germany, Greece, Hungary, India, Indonesia, Israel, Italy, Jordan, Republic of Korea, Lithuania, Mali, Mexico, Mongolia, Morocco, Niger, Norway, Pakistan, Paraguay, Philippines, Poland, Portugal, Romania, Russia, Slovakia, Slovenia, South Africa, South-East Asia, Spain, Sweden, Switzerland, Thailand, Tunisia, Turkey, Ukraine, United Kingdom, United States of America, Venezuela.

Vienna, 1996, Vol.1 and 2, 530 and 463 pages.

Isotope Techniques in the Study of Environmental Change

STI/PUB/1024

Proceedings of a Symposium held in Vienna, 14-18 April 1997.

59 papers on: Isotopic tracers of the atmosphere; isotopic tracers of the hydrosphere; isotopic studies of man-made hydrological impact; isotopic archives of climatic and environmental change; new technical approaches. 48 extended abstracts of poster presentations. Two volumes. IAEA 1998.

UNPRICED PUBLICATIONS (TECDOC)

Low-level Tritium Measurement

IAEA-TECDOC-246

Proceedings of a Consultants' Meeting held in Vienna, 24-28 September 1979.

18 papers on tritium measurement techniques.

Vienna, 1981, 204 pages.

Tracer Methods in Isotope Hydrology

IAEA-TECDOC-291

Proceedings of an Advisory Group Meeting held in Vienna, 28 September - 1 October 1982.

10 review papers on the use of isotopic tracers in groundwater and surface water.

Vienna, 1983, 198 pages.

Radioisotopes in Sediment Studies

IAEA-TECDOC-298

Report of a Consultants' Meeting held in Vienna, 13-17 December 1982.

4 review papers on the use of isotopes in sediment dating and in suspended and bedload sediment transport.

Vienna, 1983, 75 pages.

Stable and Radioactive Isotopes in the Study of the Unsaturated Soil Zone

IAEA-TECDOC-357

Proceedings of the final meeting of the joint IAEA-GSF Coordinated Research Programme for Studying the Physical and Isotopic Behaviour of Soil Moisture in the Zone of Aeration, Vienna, 10-14 September 1984.

8 papers on field and laboratory studies. Field studies in the following countries: Algeria, Federal Republic of Germany, India, Israel, Pakistan, Tunisia.

Vienna, 1985, 184 pages.

Mathematical Models for the Interpretation of Tracer Data in Groundwater Hydrology

IAEA-TECDOC-381

Proceedings of an Advisory Group Meeting held in Vienna, 17-21 September 1984.

8 review papers on groundwater flow modelling using isotopes and application examples.

Vienna, 1986, 234 pages.

Estudios de hidrología isotópica en América Latina - Isotope Hydrology Investigations in Latin America

IAEA-TECDOC-502

Proceedings of a Regional Seminar held in Mexico City, 28 September - 2 October 1987.

33 papers (7 in English, 1 in French, 25 in Spanish). Field studies in the following countries:

Argentina, Brazil, Chile, Colombia, Costa Rica, Cuba, Dominican Republic, Ecuador, Guatemala, Haiti, Mexico, United States of America.

Vienna, 1989, 482 pages.

Prompt Gamma Neutron Activation Analysis

IAEA-TECDOC-537

Report of an Advisory group Meeting held in Vienna, 30 January - 3 February 1989

Vienna, 1990

Use of Artificial Tracers in Hydrology

IAEA-TECDOC-601

Proceedings of an Advisory Group Meeting held in Vienna, 19-22 March 1990.

11 papers reviewing various aspects of artificial tracer applications in hydrological investigations related to the dynamics of surface water and groundwater (including water in the unsaturated zone and geothermal water), assessment of groundwater pollution risk, determination of river discharge, and identification of dam leakage.

Vienna, 1990, 230 pages.

Estudios geotérmicos con técnicas isotópicas y geoquímicas en América Latina - Geothermal Investigations with Isotopes and Geochemical Techniques in Latin America

IAEA-TECDOC-641

Proceedings of a Final Research Coordination Meeting held in San José, Costa Rica, 12-16 November 1990.

17 papers (12 in English, 5 in Spanish). Field studies in the following countries: Argentina, Bolivia, Colombia, Costa Rica, Ecuador, El Salvador, Guatemala, Mexico, Peru, Venezuela.

Vienna, 1992, 458 pages.

Nuclear Techniques in the Study of Pollutant Transport in the Environment. Interactions of Solutes with Geological Media (Methodological Aspects)

IAEA-TECDOC-713

Final reports of a Coordinated Research Programme (1987-1992).

12 papers on field and laboratory investigations. Field studies in the following countries: Australia, Brazil, Croatia, Czechoslovakia, Italy, Mexico, Russian Federation, Ukraine.

Vienna, 1993, 343 pages.

Les ressources en eau au Sahel. Etudes hydrogéologiques et hydrologiques en Afrique de l'Ouest par les techniques isotopiques

IAEA-TECDOC-721

Comptes rendus des études effectuées dans le cadre du projet RAF/8/012: Hydrologie isotopique dans les pays du Sahel.

17 papers. Field studies in the following countries: Cameroon, Mali, Niger, Senegal.

Vienna, 1993, 211 pages.

Isotopic and Geochemical Precursors of Earthquakes and Volcanic Eruptions

IAEA-TECDOC-726

Proceedings of an Advisory Group Meeting held in Vienna, 9-12 September 1991.

12 papers. Field studies in the following countries: Cameroon, Italy, Mexico, Russian Federation, Switzerland, Turkey, United States of America.

Vienna, 1993, 155 pages.

Mathematical Models and their Applications to Isotope Studies in Groundwater Hydrology IAEA-TECDOC-777

Proceedings of a final Research Coordination Meeting held in Vienna, 1-4 June 1993

9 papers. Applications in the following countries: Croatia, Israel, Germany, Mexico, Poland, Russia, Sweden, United States of America.

Vienna, 1994, 283 pages.

Isotope and Geochemical Techniques applied to Geothermal Investigations

IAEA-TECDOC-788

Proceedings of a Research Coordination Meeting held in Vienna, 12-15 October 1993.

14 papers. Field studies in the following countries: China, Iceland, India, Indonesia, Italy, Republic

of Korea, New Zealand, Pakistan, Philippines, Turkey, Viet Nam.
Vienna, 1995, 258 pages.

Reference and Intercomparison Materials for Stable Isotopes of Light Elements

IAEA-TECDOC-825

Proceedings of a Consultants Meeting held in Vienna, 1-3 December 1993

16 papers from Australia, Austria, Canada, France, Germany, Netherlands, New Zealand, Poland, United States of America. Vienna, 1995.

Use of Nuclear Techniques in Studying Soil Erosion and Siltation

IAEA-TECDOC-828

Proceedings of an Advisory Group Meeting held in Vienna, 26-29 April 1993

5 papers. Applications in the following countries: Brazil, Italy, United States of America.
Vienna, 1995, 204 pages.

Isotope Hydrology Investigations in Latin America 1994

IAEA-TECDOC-835

17 papers. Field studies in the following countries: Argentina, Bolivia, Brazil, Chile, Colombia, Costa Rica, Cuba, Ecuador, Guatemala, Mexico, Peru, Uruguay, Venezuela.

Vienna, 1995, 340 pages.

Isotope Field Applications for Groundwater Studies in the Middle East

IAEA-TECDOC-890

Proceedings of a final Research Coordination Meeting held in Ankara, Turkey, 21-25 November 1994

10 papers. Applications in the following countries: Jordan, Saudi Arabia, Syria, Turkey.
Vienna, 1996, 250 pages.

Manual on Mathematical Models in Isotope Hydrology

IAEA-TECDOC-910

Vienna, 1996, 107 pages.

Use of ¹³⁷Cs in the Study of Soil Erosion and Sedimentation

IAEA-TECDOC-1028

Proceedings of a consultants' meeting held in Vienna, 13-16 November 1995.

Vienna, 1998

Application of Isotope Techniques to investigate Groundwater Pollution

IAEA-TECDOC-1046

Proceedings of a final Research Coordination Meeting held in Vienna, Austria, 2-5 December 1997.

16 papers. Research in the following countries: Austria, Brazil, China, Colombia, Czech Republic, France, Hungary, India, Israel, Italy, New Zealand, Pakistan, Poland, Senegal, United Kingdom.

Vienna, 1998, 262 pages.

Other Reports

Isotope Hydrology and Geochemistry of Sulphur.
Report of an Advisory Group Meeting. 1985

2 reports on Stable Isotope Measurements Standards and Intercalibration (1985, 1987).

A report on Tritium Measurements Intercomparisons (1986, 1995).

Guide to the Safe Handling of Radioisotopes in Hydrology
Safety Series. 1989

Guide to the Safe Handling of Radioisotopes in Hydrology. Working Material. 1990.

Isotope Variations of Carbon Dioxide and other Trace Gases in the Atmosphere.
Report of a Consultants' Meeting. 1990

Isotope Techniques in Lake Investigations
Report of a UNESCO/IAEA Consultants' Meeting. 1992

The Application of Tracer Techniques in the Study of Processes and Pollution in the Black Sea.
Report of a Consultants' Meeting held in Monaco. 1992

A report on the Global Network Isotopes in Precipitation (GNIP) (1994).

Isotope Techniques in Lake Dynamics Investigations.
Report of a Research Coordination Meeting held in Duluth, MN, USA. 1995.

Isotopes in Water and Environmental Management. A brief profile of recent achievements in isotope hydrology and the Agency's involvement in this field (1995).

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