



**7<sup>th</sup> International Conference  
on Environmental Radioactivity**

***New challenges in the  
determination of environmental  
radioactivity***

**17 – 22 September 2023  
Seville, Spain**

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**PROGRAMME**

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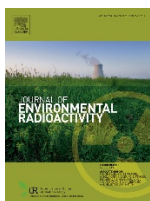
## Organization



COMENIUS  
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BRATISLAVA



## Cooperation



## Collaboration



- Vicerrectorado de Investigación:  
VII Plan Propio de Investigación y Transferencia
- Vicerrectorado de Proyección Institucional e Internacionalización
- Dirección General de Cultura y Patrimonio

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**PROGRAMME**

### ***Local Organizing Committee***

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Environmental Radioactivity  
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J.W. Mietelski, Inst. of Nuclear Physics, PAS,  
Krakow  
M. Molnár, ATOMKI, Debrecen  
T. Nakanishi, University of Tokyo  
A. Rakowski, SUT, Gliwice  
P. Steier, University of Vienna

### *Invited speakers*

D. Degering, , VKTA, Dresden  
S. Charmasson, Inst. Rad. Sûreté Nucl., La Seyne/Mer  
A. Cherkinski, Georgia Univ, Athens  
K. Hirose, Lab. Environ. Res. at Mount Fuji, Tokyo  
G.H. Hong, East China Normal Univ., Shanghai  
X. Hou, Technical University of Denmark, Riso  
Y. Inomata, Kanazawa University  
H. Kaeriyama, Nat. Res. Inst. Fisheries Sci., Yokohama  
J. Kaizer, Comenius University, Bratislava  
S. Landsberger, University of Texas, Austin  
S. -H. Lee, KRISS, Daejeon  
O. Masson, Inst. Rad. Sûreté Nucl., St-Paul-lez Durance  
J.W. Mietelski, Inst. Nucl. Physics, Krakow  
T. Nakanishi, University of Tokyo  
M. Pham, IAEA-EL, Monaco  
B. Salbu, Norwegian Univ. of Life Sciences, Aas  
Y. Tateda, Cent. Res. Inst. Elect. Power Ind., Abiko  
D. Tsumune, Cent. Res. Inst. Elect. Power Ind., Abiko.  
V. Yoschenko, Fukushima University, Fukushima  
S. Nagorny, Queen's University, Kingston  
S. Steinhäusser, TU Wien, Wien  
O.-C- Lind, NMBU, Ås  
C. Mothersill, McMaster University, Hamilton  
J. Lachner, Helmholtz-Zentrum Dresden-Rossendorf  
J. M. Abril, Universidad de Sevilla, Sevilla  
R. García-Tenorio, Universidad de Sevilla-CNA, Sevilla  
E. Chamizo, CNA-Universidad de Sevilla, Sevilla

### *Conference site*

Hotel Meliá Sevilla in Seville, Spain

Address: Dr. Pedro de Castro, 1, 41004 Sevilla

Contact: +34 954 42 15 11



### *ORAL SESSIONS*

Hotel Meliá Sevilla: Salón Giralda

PLENARY SESSIONS

PARALLEL SESSIONS A

Hotel Meliá Sevilla: Salón Santa Cruz

PARALLEL SESSIONS B

## *Programme at a Glance*

### **DAY 1 Sunday, 17 September 2023**

17:00 – 20:00 Registration

20:00 – 20:30 Welcome party

### **DAY 2 Monday, 18 September 2023**

07:30 – 08:30 Registration

09:00 – 09:30 Opening

09:30 – 11:00 ENVIRA 2023 Award

11:00 – 11:30 Coffee break

11:30 – 13:00 Plenary Session I

13:00 – 14:00 Lunch

14:00 – 16:00 Parallel session 1A

14:00 – 16:00 Parallel session 1B

16:00 – 16:30 Coffee break

16:30 – 18:45 Parallel session 2A

16:30 – 18:45 Parallel session 2B



**DAY 3** *Tuesday, 19 September 2023*

08:30 – 11:00	Plenary Session II M. Aoyama Memorial Session I
11:00 – 11:30	Coffee break
11:30 – 13:00	Plenary Session III M. Aoyama Memorial Session II
13:00 – 14:00	Lunch
14:00 – 15:00	Poster session I
15:00 – 16:30	Parallel session 3A
15:00 – 16:30	Parallel session 3B
16:30 – 17:00	Coffee break
17:00 – 18:45	Parallel session 4A
17:00 – 18:45	Parallel session 4B
20:00 – 22:00	Visit and reception Reales Alcázares

**DAY 4** *Wednesday, 20 September 2023*

08:30 – 11:00	Plenary Session IV
11:00 – 11:30	Coffee break
11:30 – 13:00	Parallel session 5A
11:30 – 13:00	Parallel session 5B
13:00 – 14:00	Lunch
19:30 – 22:00	Visit and reception Former Tobacco Factory   University of Seville

**DAY 5** *Thursday, 21 September 2023*

08:30 – 11:00	Plenary Session V
11:00 – 11:30	Coffee break
11:30 – 13:00	Parallel session 6A
11:30 – 13:00	Parallel session 6B
13:00 – 14:00	Lunch
14:00 – 15:00	Poster session II
15:00 – 16:30	Parallel session 7A
15:00 – 16:30	Parallel session 7B
16:30 – 17:00	Coffee break
17:00 – 18:45	Parallel session 8A
17:00 – 18:45	Parallel session 8B
20:30 – 23:00	Gala dinner

**DAY 6** *Friday, 22 September 2023*

08:30 – 10:30	Plenary Session VI
10:30 – 11:00	Coffee break
11:00 – 12:30	Parallel session 9A
11:00 – 12:30	Parallel session 9B
12:30 – 13:00	Plenary Session VII
13:00 – 13:30	Closing ceremony
	Student awards for the best oral and poster presentation ENVIRA 2023

# PROGRAMME WITH CONTRIBUTIONS



**DAY 1** Sunday, 17 September 2023

17:00 – 20:00 Registration

Hotel Meliá Sevilla

20:00 – 20:30 Welcome party

Hotel Meliá Sevilla: Terraza Adhara



**DAY 2** Monday, 18 September 2023

07:30 – 08:30 Registration

09:00 – 09:30 Opening

Salón Giralda

Chair: Manuel García-León, Pavel Povinec

09:30 – 11:00 ENVIRA 2023 Award

Salón Giralda

Chair: Pavel Povinec, Manuel García León

11:00 – 11:30 Coffee break

11:30 – 13:00 Plenary Session I

Salón Giralda

Chair: Chairpersons: Rafael García-Tenorio, X. Hou

*Tomoko M. Nakanishi*

What has been revealed tracing trace radioactive elements after 12 years of Fukushima Nuclear accident

*Sheldon Landsberger*

Overview of neutron activation analysis for environmental radioactivity measurements radionuclides and other pollutants in acid phosphogypsum leachates

	<p><i>Brit Salbu</i> Challenges associated with source term and particle releases</p>
13:00 – 14:00	Lunch
14:00 – 16:00	<p>Parallel session 1A Salón Giralda MASS SPECTROMETRY AND RADIOMETRICS Chair: Detlev Degering, Martin Martschini</p> <p><i>Kimberly Hinrichs</i> High Sensitivity Measurement of <math>^{238}\text{Pu}</math> in Environmental and Nuclear Forensics Collections by Thermal Ionization Mass Spectrometry</p> <p><i>Thomas Domingo</i> Enhancing Field-Deployable Detection Technologies for Nuclear Forensics</p> <p><i>Anne de Vismes Ott</i> Integration of the corrections related to the self- attenuation and true coincidence summing effects in the gamma-ray spectrum analysis software Genie2000</p> <p><i>José Luis García León</i> Optimization of a liquid scintillation spectrometer Quantulus GCT 6220 for the measurement of environmental levels of tritium in water samples</p> <p><i>João Marcos Fávoro Lopes</i> Exploratory Analysis of Gamma Spectrometry and EDXRF Applied to Soil Redistribution Evaluation in Agricultural Areas</p> <p><i>José Llanes Gamonoso</i> A practical and general methodology for efficiency calibration of coaxial Ge detectors by using NORM standards</p>

14:00 – 16:00

*Ileana Radulescu*

Major elements, radioactivity assessment and the dose rate in arable and grazing land from south-eastern part of Romania

Parallel session 1B

RADIONUCLIDE TRANSPORT IN THE ENVIRONMENT

Chairpersons: Jixin Qiao, Olivier Radakovitch

*Margot Vanheukelom*

The role of soil weathering on radiocesium ( $^{137}\text{Cs}$ ) soil-plant transfer: a pot trial study with soil toposequences

*Edyta Łokas*

Isotopic signatures of plutonium in the global cryosphere

*José María Abril Hernández*

Kinetic reactive transport of radionuclides at the sediment-water interface: Numerical model and applications

*Maria Ilie*

A detailed chronology of the sedimentation in the Danube abyssal fan records the major episodes of the late-Holocene Black Sea evolution

*Jixin Qiao*

*Pioneering tracer application of anthropogenic U-233 and U-236 in the marine environment*

*Ali Hosseini*

Field studies on the influence of environmental factors on I - 131 interception and weathering loss in grass

*Cheng Xu*

Phosphorus turnover in the Yangtze estuary and adjacent East China sea using cosmogenic  $^{32}\text{P}$  and  $^{33}\text{P}$

*Hans-Christian Teien*

Transport and transformation of  $^{137}\text{Cs}$  from freshwater to coastal water

16:30 – 18:45

Parallel session 2A

Salón Giralda

QUALITY ASSURANCE AND QUALITY CONTROL

Chair: Håkan B.L. Pettersson, Mai Khanh Pham

*Jasmina Kožar Logar*

Lessons learned by PT organizer and how can be used by the laboratories in the processes of their improvement

*Annika Klose*

Characterization of Am-241 spiked concrete samples as reference material for an alpha emitter remote sensing system

*Evgeny Taskaev*

Development of Voluntary Consensus Standards and Measurement Support for NORM / TENORM Applications

*Yanqin Ji*

Preparation of polonium-210 and carbon-14 seafood reference material and the labs intercomparison radiochemical analysis

*Bin Feng*

Development and application of a passive monitoring network for mapping 3D profiles of airborne HTO inside a nuclear facility

*Md Moudud Hasan*

A thermoluminescent dosimeter (TLD) method for  $^{137}\text{Cs}$  activity concentration profiling

*Raquel Idoeta Hernandorena*

Harmonization of detection limits for radioactivity concentrations in water in D&D situations

*Hanan Saleh*

Variation of photon absorption and the buildup factors in GSO(Ce) Scintillation Detectors.



	<p><i>Alexander Trinkl</i> IAEA-coordinated Research Helps to Improve Quality of Radionuclide Measurements in Arid and Semi-Arid Environments</p>
16:30 – 18:45	<p>Parallel session 2B Salón Santa Cruz NATURAL RADIONUCLIDES Chair: Robert Breier, Francisco Javier Guillén Gerada</p> <p><i>Mathilde Zebracki</i> Investigating the geogenic origin of atypical U characteristics – elevated U content, low (<math>^{234}\text{U}/^{238}\text{U}</math>) activity ratio – of groundwater in Beauce Limestone Aquifer System, France</p> <p><i>Kontstantina Kehagia</i> Radioactivity monitoring in drinking water in Greece</p> <p><i>Qiuju Guo</i> Long-term and continuous field measurements of radon in atmosphere, soil and water</p> <p><i>Mohammad Alem Sultani</i> Investigation of boundary layer height evolution and its implication for air pollution monitoring: a long-term study based on radon in Bratislava, Slovakia</p> <p><i>Natalia Alegria</i> Radon behaviour due to “Galerna” in Bilbao (Northern of Spain)</p> <p><i>Reem Aljber</i> The influence of soil characteristics on radon exhalation rate and in ambient air in Kuwait</p> <p><i>Abdelmourhit Laissaoui</i> Environmental reconstruction in the Oualidia – Sidi Moussa lagoon complex (western Morocco) using radiometric dating combined with geochemical approaches</p>

*Paulo da Silva*

Assessment of  $^{238}\text{U}$  and  $^{226}\text{Ra}$  activity  
concentration along the Amazon Tall Tower  
Observatory site

**DAY 3 Tuesday, 19 September 2023**

08:30 – 11:00

Plenary Session II

M. Aoyama Memorial Session I

Salón Giralda

Chair: Tomoko M. Nakanishi, Pavel Povinec

*Katsumi Hirose*

Temporal changes of  $^{137}\text{Cs}$  activity  
concentrations in bottom waters and sediments  
in the Far Eastern Seas: Partitioning of  $^{137}\text{Cs}$   
between bottom waters and sediments

*Yayoi Inomata*

Evaluating the global scale transport of surface  
seawater from 1956 to 2021 using  $^{137}\text{Cs}$  released  
in the global ocean

*Daisuke Tsumune*

Ocean simulations for assessing the impact of  
 $^{137}\text{Cs}$  derived from the Fukushima Daiichi Nuclear  
Power Plant accident

*Hideki Kaeriyama*

Radiocaesium derived from the Fukushima  
Daiichi Nuclear Power Station in the ocean  
interior as subtropical mode water in the North  
Pacific

*Sabine Charmasson*

Role played by rivers in the supply of Fukushima  
Daiichi-Derived radionuclides in the coastal zone  
of Japan

11:00 – 11:30

Coffee break

11:30 – 13:00

Plenary Session III

M. Aoyama Memorial Session II

Salón Giralda

Chair: Katsumi Hirose, Hideki Kaeriyama

	<p><i>Jakub Kaizer</i> Recent investigations of anthropogenic radionuclides in seawater of the western North Pacific Ocean</p> <p><i>Sang-Han Lee</i> Temporal variation of Cs-137 in the seawater from the East Sea/Sea of Japan (from the Fukushima nuclear power plant accident to the present)</p> <p><i>Yutaka Tateda</i> Non-destructive <math>\gamma</math>-spectrometry of ultra-low background level for small size sample enabled clarification of specific radio-caesium transfer along food chain off Fukushima after 2011</p> <p><i>Vasyl Yoschenko</i> Radiocesium dynamics in typical Fukushima forests</p>
13:00 – 14:00	Lunch
14:00 – 15:00	Poster session I
15:00 – 16:30	<p>Parallel session 3A Salón Giralda FUKUSHIMA, CHERNOBYL AND TEST GROUND Chair: Sang-Han Lee, Vasyl Yoschenko</p> <p><i>Asako Shimada</i> Local Surface and Vertical Distribution and Isotope Ratios for Radiocesium</p> <p><i>Hirofumi Tsukada</i> Transfer of <math>^{137}\text{Cs}</math> and <math>^{90}\text{Sr}</math> from soil to potato: Interpretation of association from global fallout in Aomori to accidental released in Fukushima and Chornobyl</p> <p><i>Tobias Weissenborn</i> How to measure the bioavailability from individual “HotParticles”</p> <p><i>Lyubov Timonova</i> Contamination of STS soil with tritium</p>

15:00 – 16:30

*José A. Corcho Alvarado*

Residual radionuclide concentrations at the Bokak and Bikar Atolls, Northern Marshall Islands

*Antonio Jesús López Fuentes*

Characterization of natural and anthropogenic radionuclides in sediment cores from the Black Sea by high resolution gamma-spectrometry

Parallel session 3B

Salón Santa Cruz

RADIOANALYTICS

Chair: Ivan Kontul', Serge Nagorny

*Christos Tsabaris*

Progress on radioactivity tools for the deep ocean

*Georgios Siltzovalis*

Characterization of novel instruments for radioactivity monitoring in oceanic environments

*Jinzhong Du*

Natural occurring Ra and Rn to address submarine groundwater discharge derived  $^{90}\text{Sr}$  at the land-sea interface

*Huiying Li*

Radium-derived water mixing and submarine groundwater discharge (SGD) as sources of carbon and nutrients in the Beibu Gulf, South China Sea

*Xilong Wang*

Radium and Radon isotopes as tracer study on submarine groundwater discharge and its associated nutrient/carbon fluxes along the coast regions of China: a synthesis

	<p><i>José Luis García León</i> Development of a technique for the determination of <math>^{14}\text{C}</math> in water by carbonate precipitation and AMS</p>
16:30 – 17:00	Coffee break
17:00 – 18:45	<p>Parallel session 4A Salón Giralda MODELLING Chair: José María Abril, Daisuke Tsumune</p> <p><i>Robert Breier</i> Numerical simulation of particle fluxes and production of cosmogenic nuclide in the Earth's atmosphere.</p> <p><i>Pieter De Meutter</i> On the use of 3D adjoint atmospheric transport modelling to simulate lower tropospheric concentration variations of cosmogenic radionuclides</p> <p><i>Céline Duffa</i> Use of modelling results to enhance the radiological monitoring of the French Mediterranean coastal zone</p> <p><i>Olivier Radakovitch</i> Modelling of dissolved <math>^{137}\text{Cs}</math> transport along a river-sea continuum and desorption at the estuary</p> <p><i>Erik Berge</i> A comparison of dry deposition parametrization schemes in atmospheric radionuclide prediction models. Application to the Chernobyl case.</p> <p><i>Sohan Chouhan</i> ETMOD (Environmental Tritium MODel): Version 2 Capabilities</p> <p><i>Magne Simonsen</i> Radionuclide and contaminant transport modeling in estuaries and fjords</p>

17:00 – 18:45

Parallel session 4B

Salón Santa Cruz

NORM and NATURAL RADIONUCLIDES

Chair: José María López-Gutiérrez

*Isidoro Gutiérrez Álvarez*

Use of FLEXPART-WRF to investigate radon transport events associated with the impact of a NORM repository

*Silvia Pérez Moreno*

Development of a process for removal of natural radionuclides and other pollutants in acid phosphogypsum leachates

*Francisco Javier Soto Cruz*

Characterization and valorization diagnosis of generated NORM wastes in the decontamination process of phosphogypsum leachate

*Yoshikazu Kikawada*

Effects on local atmospheric environment of volcanic ash from Sakurajima volcano, inferred from atmospheric deposition of 40K at Kagoshima City, Japan

*Elena Castaño Casco*

Development of a robust methodology to obtain the radon exhalation rate in different materials

*Francisco Piñero García*

Biodistribution of naturally occurring radionuclides in European perch (*Perca fluviatilis*) from Swedish lakes

20:00 – 22:00

Visit and reception \*  
Reales Alcázares



Participants would be at Alcázar before 20:15  
Meeting point: Puerta del Apeadero (Patio de Banderas)

\*The detailed agenda for this visit will be given during the conference.

**DAY 4**    *Wednesday, 20 September 2023*

08:30 – 11:00

Plenary Session IV

Salón Giralda

Chair: Brit Salbu, Sheldon Landsberger

*Olivier Masson*

Change in airborne radioiodine physico-chemical distribution with time: a key issue for dose assessment and contamination of the environment in nuclear emergencies

*Xiaolin Hou*

Level and distribution of anthropogenic radionuclides in China - interaction of marine and terrestrial environment

*Gi Hoon Hong*

Utilities of environmental radioactivity tracers in assessing coastal carbon sequestration potential

*Elena Chamizo*

Pushing the limits of the 1 MV Accelerator Mass Spectrometry system at the Centro Nacional de Aceleradores to analyse  $^{233}\text{U}$  and  $^{244}\text{Pu}$

*Johannes Lachner*

Next generation of isobar suppression at the new 1 MV AMS system HAMSTER

11:00 – 11:30

Coffee break

11:30 – 13:00

Parallel session 5A

Salón Giralda

ATMOSPHERE

Chair: Olivier Masson, Georg Steinhauser

*Alexandra Ioannidou*

40-years  $^{210}\text{Pb}$  and trace elements concentrations at Helsinki, Finland

*Ivan Kontul'*

Source apportionment study of total carbon fraction of urban aerosols in Bratislava, Slovakia



	<p><i>José María López Gutiérrez</i> Origin of atmospheric <math>^{129}\text{I}</math> in Southern Spain</p> <p><i>Anna Cwanek</i> Case study of recent radioactive contamination in the lower atmosphere of Spitsbergen, Svalbard archipelago</p> <p><i>Agustín Cerezo Fernández</i> A fast algorithm for real-time monitoring of artificial radioisotopes implemented in the Catalan Environmental Radioactivity Surveillance Network</p>
11:30 – 13:00	<p>Parallel session 5B Salón Santa Cruz ACCELERATOR MASS SPECTROMETRY Chair: Elena Chamizo, Alexander Cherkinsky</p> <p><i>Karin Hain</i> Extending the set of environmental tracers by the novel anthropogenic signatures <math>^{233}\text{U}/^{236}\text{U}</math> and <math>^{237}\text{Np}</math></p> <p><i>Martin Martschini</i> Analysis of <math>^{90}\text{Sr}</math> in environmental samples at the attogram level by accelerator mass spectrometry</p> <p><i>Stephan Winkler</i> Exploring the lowest levels of environmental <math>^{90}\text{Sr}/\text{Sr}</math> compared to <math>^{236}\text{U}/\text{U}</math> in carbonates and seawater using a new, highly sensitive Accelerator Mass Spectrometry technique</p> <p><i>Oscar Marchhart</i> ALIS - a new isobar suppression setup for trace analysis of <math>^{90}\text{Sr}</math> at Cologne AMS</p> <p><i>Miroslav Jeřkovský</i> Performance and first analysis using accelerator mass spectrometry in CENTA laboratory, Bratislava</p> <p><i>Gereon Hackenberg</i> Status and development of <math>^{90}\text{Sr}</math> soil measurements at Cologne AMS</p>
13:00 – 14:00	Lunch

19:30 – 22:00

Visit and reception\*  
Former Tobacco Factory  
University of Seville



Meeting point: Paraninfo

\*The detailed agenda for this visit will be given during the conference.

**DAY 5** *Thursday, 21 September 2023*

08:30 – 11:00

Plenary Session V

Salón Giralda

Chair: Jerzy-Wojtek Mietelski, Ivo Svetlik

*Rafael García-Tenorio*

Identification of gaps and challenges in the management of NORM

*Detlev Degering*

Sub Surface Science - Radionuclide Research in and about the Underground

*Serge Nagorny*

Detector radiopurity and background problems in underground experiments

*Mai Khanh Pham*

Accreditation of the IAEA's Environmental Laboratories for reference material production and updates on IAEA proficiency test exercises

*José María Abril Hernández*

Progresses on the  $^{210}\text{Pb}$ -based dating of recent sediments under varying rates of supply

11:00 – 11:30

Coffee break

11:30 – 13:00

Parallel session 6A

Salón Giralda

ATMOSPHERE

Chair: Miroslav Hýža, Alexandra Ioannidou

*Olivier Masson*

Uranium and thorium airborne levels around a Yellow-cake\_UF<sub>4</sub> conversion plant: Stack discharge and resuspension contributions

*Francisco Piñero García*

Impact of extreme Saharan dust intrusion on radioactive aerosols in southeast Spain

*Christophe Gueibe*

Unprecedented xenon collection and separation from air on silver-exchanged zeolites

	<p><i>Alejandro Barba Lobo</i>  A methodology to determine <math>^{212}\text{Pb}</math>, <math>^{212}\text{Bi}</math>, <math>^{214}\text{Pb}</math> and <math>^{214}\text{Bi}</math> in atmospheric aerosols; application to precisely obtain aerosol residence times and Rn-daughters' equilibrium factors</p>
11:30 – 13:00	<p>Parallel session 6B  Salón Santa Cruz  ACCELERATOR MASS SPECTROMETRY  Chair: Miroslav Jeřkovský, Johannes Lachner</p> <p><i>Andreas Wiederin</i>  Isobar analysis in the actinide range for the characterization of a prospective Np spike material</p> <p><i>Stephanie Adler</i>  Technetium-99: what is your environmental abundance?</p> <p><i>Darío Sánchez Jiménez</i>  Exploring the limits of Accelerator Mass Spectrometry in nuclear waste characterisation</p> <p><i>Antonio Jesús López Fuentes</i>  Measurement of the <math>^{239}\text{Pu}</math>, <math>^{240}\text{Pu}</math> and <math>^{236}\text{U}</math> in sediments from the Black Sea using the 1 MV AMS system at CNA</p> <p><i>Mercedes López-Lora</i>  Marine radioactivity investigations around a dumping area outside Gothenburg by Acceleratory Mass Spectrometry</p> <p><i>Martina Gwozdz</i>  A dynamic and automated dilution setup for a quantitative characterization of activated graphite material</p>
13:00 – 14:00	Lunch
14:00 – 15:00	Poster session II
15:00 – 16:30	<p>Parallel session 7A  Salón Giralda  MARINE ENVIRONMENT  Chair: Mats Eriksson, Karin Hain</p>

	<p><i>Katsumi Hirose</i> Chemical implication of partition coefficient of <math>^{137}\text{Cs}</math> between aqueous and suspended and phases in natural water</p> <p><i>Sang-Han Lee</i> The distribution characteristics of Pu mass ratio in the marine environment around the Korean Peninsula</p> <p><i>Justin Gwynn</i> The effects of climate change on sources of radionuclides to and within the marine environment.</p> <p><i>Antonelli Christelle</i> Monitoring of radioactivity along the French Mediterranean coast</p> <p><i>Unai Abascal Ruiz</i> Transport and accumulation of artificial radionuclides in a marine core from the Celtic Sea</p>
15:00 – 16:30	<p>Parallel session 7B Salón Santa Cruz RADIOANALYTICS Chair: Jakub Kaizer, Gabriele Wallner</p> <p><i>Daniel Zapata Garcia</i> Fast radiochemistry for the measurement of airborne radioactivity in emergency situations</p> <p><i>Hong-Chun Li</i> Monitoring heavy metal pollution by using sediment collector along a river catchment: Ker-Ya River in north western Taiwan</p>
16:30 – 17:00	Coffee break
17:00 – 18:45	<p>Parallel session 8A Salón Giralda MARINE SEDIMENTS Chair: Christos Tsabaris, Yihong Xu</p>

*Mats Eriksson*

On the use of time-markers in  $^{210}\text{Pb}$  sediment dating model validation

*Angus Collison*

Radioactivity in the Irish coastal environment

*Ana del Carmen Arriola Velásquez*

Tracing sediment dynamics in El Confital bay (Spain): natural radionuclides distribution and their relationships with sediment characteristics

*Yihong Xu*

Plutonium isotopes dating for the recent sediments in shallow lakes in Eastern China

*Xu Ren*

Sources of organic carbon in sediments from Kongsfjorden, Arctic

*José A. Corcho Alvarado*

Plutonium isotopes as tracers of sediment transport processes in the southern Gulf of Mexico

*Filothei Pappa*

Temporal investigation of radionuclides and metals in Gera Gulf, Lesvos, Greece

17:00 – 18:45

Parallel session 8B

Salón Santa Cruz

RADIONUCLIDES IN BIOTA

Chair: Raquel Idoeta, Yutaka Tateda

*Airi Mori*

Seafood ingestion dose following the Fukushima accident using probabilistic and deterministic approaches

*Caroline Licour*

Assessment of radio cesium and natural radionuclides in mosses and study of their distribution in a mountainous region in Central Portugal using GIS

*Sophie Reygrobellet*

Dose rates to reference organisms due to regional radionuclide background levels in France

*Michał Saniewski*

Distribution of anthropogenic radionuclides in King George Island (South Shetland Archipelago, Antarctic Peninsula)

*Jasmina Kožar Logar*

Removal of the radioactive micropollutants from environmental water by the activated carbon from alternative sources

*Margot Vanheukelom*

Predicting radiocesium soil-plant transfer on a global scale: a meta-analysis study

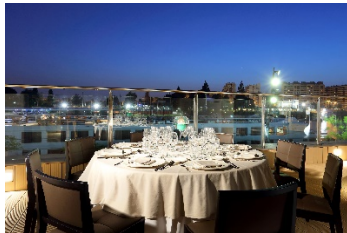
*Jalal Sharib*

Soil erosion and sedimentation rate using Cesium-137 in the Sembrong catchment

20:30 – 23:00

Gala dinner\*

Restaurant: Muelle 21



Avda. Santiago Montoto s/n, Edificio Acuario de Sevilla, 41012 Sevilla

\*The detailed agenda for the gala dinner will be given during the conference.

**DAY 6 Friday, 22 September 2023**

08:30 – 10:30

Plenary Session VI

Salón Giralda

Chair: Gi Hoon Hong, Olivier Masson

*Georg Steinhauser*

Current state of Zaporizhzhia NPP and other nuclear risks in Ukraine

*Alexander Cherkinsky*

Distribution of carbon isotopes in different soil fractions, including soil CO<sub>2</sub> gas on the example of Ultisols, South Carolina, USA.

*Carmel Mothersill*

Development of population level biomarkers for low dose radiation: the importance of non-targeted effects

*Ole Christian Lind*

Mean soil contaminant concentration does not provide a conservative indicator of external exposure to wildlife – reindeer in Jotunheimen, Norway as a case

10:30 – 11:00

Coffee break

11:00 – 12:30

Parallel session 9A

Salón Giralda

RADIOECOLOGY

Chair: Ole Christian Lind, Carmel Mothersill

*Christy Maynard*

Environmental and Nutritional Chemistry of Wild Harvested Berries vs. Commercial Berries: Depositional and Uptake Chemistry and Human Health Assessment

*Airi Mori*

A New Global Seafood Dose Assessment

*Daniel Butscher*

Influence of Eu(III) and U(VI) on rat and human kidney cells



	<p><i>Sebastian Friedrich</i> Influence of EDTA and EGTA on the Eu(III)/Cm(III) speciation in the human digestive system</p> <p><i>Montaha Behbehani</i> Po loss in Seafood due to Cooking and its dose implications</p>
11:00 – 12:30	<p>Parallel session 9B Salón Santa Cruz RADIOANALYTICS Chair: Shaoming Pan, Lyubov Timonova</p> <p><i>Ignasi Reichardt</i> Weather-dependent detection limits for gamma-ray spectrometry in environmental radioactivity monitoring</p> <p><i>Bernardo Salas Mar</i> Questioning the increase of population around the Laguna Verde Nuclear Power Plant- Mexico</p> <p><i>Dobromir Pressyanov</i> Novel approaches for measuring low radon levels in the environment by passive detectors</p>
12:30 – 13:00	<p>Plenary Session VII Salón Giralda Chair: Manuel García-León, Pavel Povinec</p> <p><i>Jerzy-Wojtek Mietelski</i> Natural reactor in Oklo – 50 years from discovery</p>
13:00 – 13:30	<p>Closing ceremony Salón Giralda Chair: Pavel Povinec, Manuel García-León Student awards for the best oral and poster presentation ENVIRA 2023</p>

## Poster Session I

14:00 – 15:00	Tuesday, 19 September 2023
	<b>RADIOMETRICS</b>
2-01	Darwish Al-Azmi Background radiation measurements in Kuwait
2-02	Daniel Gurganus High sensitivity measurement of $^{238}\text{Pu}$ with uranium tracer for interference correction by thermal ionization mass spectrometry
2-03	Minju Lee A consideration of the measurement of $^{241}\text{Am}$ in the environmental samples using gamma spectrometry
2-04	Wanno Lee Recent research on the real-time detection system for environmental radiation at Daedeok nuclear facility in Korea
2-05	Jong-Myoung Lim Method validation of $^{14}\text{C}$ in the environmental samples with LSC and AMS
2-06	Rafael García-Tenorio Development of procedures to be applied by the laboratories belonging to the Spanish Environmental Radiological Surveillance Network in “special” situations
2-07	Anna Cwanek Pushing the sensitivity limit of quadrupole mass spectrometry ICP MS/MS for plutonium isotopes
2-08	Hong-Chun Li Detecting heavy metal pollution events recorded by a sediment core from Ker-Ya River in NW Taiwan: Scanning XRF and ICP-OES methods
2-09	Juan Mantero Cabrera RaPCUBES: An open (free and friendly) software (interface) for solving radioactive series
2-10	Ileana Radulescu From NaI to $\text{CeBr}_3$ detectors for internal contamination dosimetry research
	<b>RADIOANALYTICS</b>
7-01	Jaeun Lee Rapid measurement of cesium-137 ( $^{137}\text{Cs}$ ) in seawater using an ion-exchange resin (AMP-PAN resin, KNI-FC-PAN resin)

7-02	Myung Ho Lee Radiochemical analysis and evaluation in radioactive samples for decommissioning of nuclear power plant
7-03	Victoria Lérica Toro Sequential extraction of actinides from sediment samples for the analytical determination of $^{237}\text{Np}$ by AMS
7-04	Joana Martínez Ratia Simultaneous determination of $^{210}\text{Pb}$ and $^{90}\text{Sr}$ and $^{210}\text{Po}$ isolation in sludge samples using a plastic scintillation resin and measuring by liquid scintillation counting
7-05	Álvaro López Rodríguez Improving the measurement of $^{210}\text{Po}$ in seawater samples
7-06	Rafael Martins Domingos Challenges in measuring $^{22}\text{Na}$ in rainfall by gamma spectrometry in the city of São Paulo, Brazil
	<b>NORM</b>
8-01	Kil Yong Lee Natural radioactivity and radon emanation coefficient of various rocks used in building materials
8-02	Ivanka Lovrenčić Mikelić $^{40}\text{K}$ , $^{226}\text{Ra}$ , $^{232}\text{Th}$ , $^{238}\text{U}$ , and radiological risks in surface soil around the Plomin thermal power plant (Istria, Adriatic Sea, Croatia)
8-03	Messouli Mounia Assessment of radioactivity content in raw and manufactured building materials in Morocco analysed by high resolution
8-04	Cristina Bañobre Miguélez Distribution of natural radionuclides in horticultural systems due to phosphate fertilization in Uruguay
8-05	Akihiro Sakoda In-situ measurement of radon and thoron exhalation rates from interior walls in a Japanese building
8-06	Omar Saleh Abstract
8-07	Grzegorz Szaciłowski Studies on procedure for thorium determination in NPK and micronutrient fertilizer
8-08	Nanping Wang Relationship between indoor radon concentration and soil radon concentration and soil uranium and radium content in Urumqi City

8-09	Alejandro Barba Lobo Definition and assessment of the pollution indexes for radionuclides in the Biosphere Reserves of the Odiel Saltmarshes (Southwestern Iberian Peninsula)
8-10	Paulo da Silva Activity concentration of natural radionuclides ( $^{238}\text{U}$ , $^{226}\text{Ra}$ , $^{232}\text{Th}$ , $^{228}\text{Ra}$ , $^{210}\text{Pb}$ and $^{40}\text{K}$ ) in soil amended with niobium tailings
8-11	Francisco Javier Guillén Gerada Assessment of environmental radiological impact of naturally occurring radionuclides in former metallic mining sites in Extremadura (Spain)
	<b>RADIONUCLIDES IN BIOTA</b>
13-01	Francisco Javier Guillén Gerada Distribution of tritium within different tissues of freshwater carps from a cooling reservoir of a Nuclear Power Plant in a Mediterranean ecosystem
13-02	Huisu Lee Recent trends on bioaccumulation of artificial radionuclides ( $^{137}\text{Cs}$ , $^{239+240}\text{Pu}$ and $^{90}\text{Sr}$ ) in marine organisms from Korea seas: A comprehensive review
13-03	Juan Mantero Cabrera Anthropogenic and natural radionuclides in moss samples from Sweden 30 years after the Chernobyl accident
13-04	Aleksandra Moniakowska Are the accumulated $^{210}\text{Po}$ and $^{210}\text{Pb}$ in Polish wild herbs safe for consumers?
13-05	Dagmara Strumińska-Parulska On the occurrence and related dose assessment from $^{210}\text{Po}$ and $^{210}\text{Pb}$ in Ukrainian wild medicinal plants
13-06	Per Törnquist Measurements of $^{90}\text{Sr}$ , $^{239+240}\text{Pu}$ and $^{241}\text{Am}$ in white-tailed eagles in Sweden and Poland
13-07	Ibtisam Yusuf Uranium clearance kinetics in hair after the cessation of chronic workplace exposure
	<b>RADIOECOLOGY</b>
14-01	Cristina Bañobre Miguélez Identification and characterization of the radioactive fraction in black sands
14-02	Stefan Bister Radioecological investigation of a contaminated site in southern Germany

14-03	Maria Hanane El Hassane Radiopharmaceutical waste and its impact on the environment
14-04	Olga Jefanova Anthropogenic and natural radionuclides in soil profiles of forest ecosystem in vicinity of the BelNP
14-05	Małgorzata Kazimierowicz Characterization and assessment of $^{137}\text{Cs}$ , $^{90}\text{Sr}$ and $^{40}\text{K}$ radioactivity of five species of herbs collected in two regions of central Poland
14-06	Marguerite Monfort Presentation of the CERES platform used to evaluate consequences on population of releases of pollutants
14-07	Martina Novakova Vertical distribution of Cs-137 in uncultivated soil at selected sites in the Czech Rep
14-08	Shaoming Pan Radio-caesium and Pu isotopes in the sediment cores in Yunnan plateau lakes, Southwest China: Distribution and source identification
14-09	Andrius Puzas $^{137}\text{Cs}$ and Isotopic Pu “Zero Point” Screening for Potential Anthropogenic Radionuclide Fall-out in Eastern Lithuania
14-10	Bernardo Salas Mar Questioning to disposal of spent fuel at the Laguna Verde Nuclear Power Plant- Mexico
14-11	Francisco Javier Santos Arévalo Determination of biobased carbon content in Argentine industry products by AMS
14-12	Hideki Tsuji Effects of $\text{NH}_4^+$ origin on $^{137}\text{Cs}$ desorption from lake sediments
14-13	Ignacio Vioque Transuranic signals in rabbit feces collected at the contaminated terrestrial site of Palomares (Spain)
14-14	Yoon Yeol Yoon Tritium Distribution of Groundwater near Geum River and Nakdong River Basin in Korea
14-15	Natalia Alegria Evaluation of the New Environmental Radiological Surveillance Network of the Basque Country
14-16	Xiaolin Hou Behaviour of transuranic (Np, Pu, Am) and fission products ( $^{99}\text{Tc}$ , $^{129}\text{I}$ ) in the environment in the Northeast Asia

14-17	Małgorzata Kazimierowicz Gross alpha and gross beta radionuclides contamination of surface waters in heavily industrialized areas near Warsaw (central Poland)
14-18	Edyta Łokas Temporal and spatial patterns of fallout radionuclides accumulation on Gulkana Glacier, Alaska Rang
14-19	Aleksandra Moniakowska On $^{210}\text{Po}$ , $^{210}\text{Pb}$ , $^{40}\text{K}$ , $^{137}\text{Cs}$ , $^{226}\text{Ra}$ and $^{234}\text{Th}$ in algae diet supplements - the assessed radiation hazard of aquatic superfoods
14-20	Pavel Povinec Radiocarbon variations in the biosphere with solar activity
14-21	Francisco Javier Santos Arévalo Environmental applications of radiocarbon measurement by AMS at the Centro Nacional de Aceleradores (Spain)
14-22	Yoon Yeol Yoon Tritium distribution of various groundwater in Korea
14-23	Pavel Povinec Fifty-five years of radiocarbon variations studies in Bratislava
14-24	Ivo Svetlik Chronological records in animal tissues
14-25	Hossein Khalafi Study of Soil Inventories of Natural and Anthropogenic Radionuclides in Gilan Province, North of Iran.
14-26	Jose Antonio Trinidad Ruiz 30 years of National Network for Environmental Radiological Surveillance in the Atmosphere and Terrestrial Environment
14-27	Theo Merteimekis Bringing innovation to autonomous exploration of marine radioactivity: the RAMONES project

## Poster Session II

14:00 – 15:00	Thursday, 21 September 2023
	<b>RADIONUCLIDE TRANSPORT IN THE ENVIRONMENT</b>
3-01	Hilde Elise Heldal Bioconcentration factors (BCFs) and sediment distribution coefficients (Kds) for $^{137}\text{Cs}$ in a sheltered Norwegian fjord system
3-02	Tomislav Ilievski Radioactivity in agricultural crops and soils from the family farms in Croatia
3-03	Marina Konstantinova On the influence of soil organic matter on the downward migration of $^{137}\text{Cs}$ and $^{239,240}\text{Pu}$
3-04	Raúl Eduardo Linares Jiménez Influence of soil microbiology on radionuclide transport and uptake into plants
3-05	Soroush Majlesi Transfer of sedimentary carbon into benthic organisms: Implications for disposal of radioactive waste
3-06	Yelena Polivkina Assessment of the influence of edaphic factors on the transfer of artificial radionuclides (cesium-137 and strontium-90) in the soil-agricultural plant system
3-07	Nils Sassenberg Investigation of the transport and transfer behaviour of I-125 using a laboratory lysimeter with reference soil
3-08	Tim Schmalz Migration of technetium in German reference soils
3-09	Motoki Terashima Liquid phase dependence of field distribution coefficients of stable elements between river water and bottom sediments
3-10	Katsumi Hirose Chemical implication of partition coefficient of $^{137}\text{Cs}$ between aqueous and suspended and phases in natural water
3-11	Jalal Sharib The use of Beryllium-7 as a tracer in-depth penetration study

	QUALITY ASSURANCE AND QUALITY CONTROL
4-01	Yoonhee Jung Development of reference material for the determination of alpha, beta and gamma emitting radionuclides in concrete waste generated from decommissioning of nuclear facility
4-02	Mai Khanh Pham A new Certified Reference Material IAEA-465 for radionuclides in Baltic Sea sediment
4-03	Abdelmourhit Laissaoui Gross alpha and beta activity in non-saline waters using NM ISO 11704: method validation and application to bottled mineral and tap waters from Morocco
	NATURAL RADIONUCLIDES
5-01	María López Pérez Natural radioactivity concentrations and radiological risk assessment of pyroclastic products from Tajogaite volcano (La Palma, Canary Islands)
5-02	Rico Neil Quierrez Natural Radioactivity of Selected Mineral Deposits in Camarines Norte and Northern Palawan, Philippines
5-03	Alexandria Tanciongco Preliminary baselining of natural radioactivity in selected active volcanoes in the Philippines
5-04	Cristina Bañobre Miguélez Application of $^{210}\text{Pb}$ as an environmental tracer for hydrological characterization of two shallow coastal lagoons in Uruguay
5-05	Grzegorz Olszewski Possibility of $^{210}\text{Po}$ and $^{210}\text{Pb}$ concentration prediction in mineral waters based on their total mineralization
	FUKUSHIMA, CHERNOBYL AND TG
6-01	Sergiy Dubchak Americium and plutonium isotopes in forest ecosystems of the Chornobyl Exclusion zone
6-02	Haejin Kim Transport of $^{137}\text{Cs}$ discharged by the Fukushima accident based on a Lagrangian particle tracking model
6-03	Hikaru Miura Comparison of cesium-bearing microparticles from marine and terrestrial sources



6-04	Pavel Povinec Tritium in seawater of the NW Pacific Ocean: possible effects after releases of contaminated water from the Fukushima site
6-05	Michał Saniewski Current radioactive fallout contamination along a trans-European gradient assessed using terricolous lichens
6-06	Yutaka Tateda Bio-availability of radio-caesium in mesoplankton collected from Fukushima coastal waters of 2018 and 2020
6-07	Lyubov Timonova The content of tritium in the plant cover of the 'Balapan' site at the Semipalatinsk Test Site
6-08	Hanna Kim Transport of $^{137}\text{Cs}$ discharged by the Fukushima accident based on a Lagrangian particle tracking model
6-09	Unai Abascal Ruiz Presence of Fukushima derived radionuclides in the Arctic
	MODELLING
9-01	Antonio Borràs López Airborne radionuclide activity concentration forecast using SARIMA and Exponential Triple Smoothing algorithms
9-02	Mee Jang Evaluation of response function for the beta detector system using Monte Carlo simulation
9-03	Kyeong Ok Kim Dispersion of particle-reactive elements caused by the phase transitions in scavenging
9-04	Margarita Herranz Soler Radiological environmental impact assessment by Ecolego. Potential reach of accidental discharges from Zaporizhzhia nuclear power plant
9-05	Olivier Radakovitch Chaining models for the assessment of the economic impact of a nuclear accident on forestry and aquatic activities
9-06	Sebastian Friedrich RADEKOR: Speciation and transfer of radionuclides in the human organism especially taking into account decorporation agents – a joint project

9-07	Mohammad Alem Sultani Various approaches to calculate radon exhalation rate for estimation of CO <sub>2</sub> flux from soil and their verification by experimental measurements
9-08	Daisuke Tsumune Distributions and inventory of <sup>137</sup> Cs released from multiple sources in a general circulation model
	ATMOSPHERE
10-01	Charles Doll Radioxenon as a potential atmospheric tracer for climate studies
10-02	Aoife Kinahan Ireland's Updated National Radiation Monitoring Network
10-03	Júlia Oliveira Castro Two years of continuous monitoring of <sup>7</sup> Be and <sup>210</sup> Pb in rainfall collected at the IPEN campus, São Paulo, Brazil
10-04	Lucie Švamberová Back-tracking of radioactive aerosols in the atmosphere with high temporal resolution
10-05	Tamás Varga Greenhouse gas Observations at a middle-sized European city, Debrecen, Hungary: CO <sub>2</sub> , CH <sub>4</sub> mole fraction, stable isotope ratio and radiocarbon measurements in different seasons
10-06	Gabriele Wallner An attempt to measure the <sup>237</sup> Np/ <sup>239</sup> Pu atom ratios on air filters collected in the early 1960s in Vienna, Austria
10-07	Antonio Borràs López Analysis of Gross Beta activity concentration associated to aerosols in Mallorca (Spain) based on Multifractal Detrended Fluctuation Analysis (MFDFA)
10-08	Hossein Khalafi Study of air-pollutants in Gillan province, north of Iran by using neutron activation analysis.
10-09	Antonio Oliver Ramón Analysis of Gross Beta activity concentration associated to aerosols in Mallorca (Spain) based on Multifractal Detrended Fluctuation Analysis (MFDFA)
10-10	Miroslav Hyza Back-tracking of radioactive aerosols in the atmosphere with high temporal resolution

	MARINE ENVIRONMENT
11-01	Beatriz González González Building a database from radioisotopes measurements: the case of $^{234}\text{Th}$ in seawater
11-02	Neus Miquel i Armengol Radiological impact of the submarine volcano Tagoro (Canary Islands) on coastal ecosystem from 2011 to 202
11-03	Junhyeong Seo Distributions of $^{137}\text{Cs}$ in the Southern Sea of Korea: Preliminary results of onboard measurement in 2022
11-04	Elena Chamizo 16 years of actinides studies in marine samples in the frame of the IAEA-CNA collaborating agreement
11-05	Jaeun Lee Distributions of radiocesium and plutonium in the Korean seas and North Pacific after the Fukushima accident, 2011-2014
11-06	Rafael García-Tenorio First radionuclide survey in marine environment off the Mauritius coast: levels and distribution of naturally occurring radionuclides and $^{137}\text{Cs}$ in seawater, sediments and biota
	MARINE SEDIMENTS
12-01	Taieb Errahman Djamel Environmental radiological risk assessment of algae from Algiers coastline
12-02	Esperanza Liger Pérez Spatial distribution of radionuclides in marine sediments from Djibouti seamounts (Alboran Sea, Western Mediterranean)
12-03	Grzegorz Olszewski On the prevalence of $^{242\text{m}}\text{Am}$ in sediments collected from the vicinity of a Swedish nuclear facility
12-04	Marina Sáez Muñoz Anthropocene dating by radionuclide analysis of estuarine sediments from northern Spain
12-05	Ana Del Carmen Arriola Velasquez Gamma emitter radionuclides as tracers of sediment dynamics in beach areas: a comparison between in situ and lab-based gamma spectrometry measurements
12-06	Stefan Bister Determination of sedimentation rates using Pb-210 and Cs-137 at a renaturalised salt marsh of the Wadden Sea

- 12-07 | Rafael García-Tenorio  
Sediment Profiles from Anoxic Regions off the  
Namibian Coast
- 12-08 | Dagmara Strumińska-Parulska  
<sup>241</sup>Am in the bottom sediments of the southern Baltic  
Sea

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Information on programme



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