

CURRICULUM VITAE ABREVIADO (CVA)

IMPORTANT – The Curriculum Vitae cannot exceed 4 pages. Instructions to fill this document are available in the website.

Part A. PERSONAL INFORMATION

First name	José María		
Family name	López-Gutiérrez		
Gender (*)	Male	Birth date (dd/mm/yyyy)	
Social Security, Passport, ID number			
e-mail	LGUTI@US.ES	URL Web	
Open Researcher and Contributor ID (ORCID) (*)	0000-0001-8672-8075		

(*) Mandatory

A.1. Current position

Position	Catedrático de Universidad		
Initial date	06/10/2023		
Institution	Universidad de Sevilla		
Department/Center	Física Aplicada I	Centro Nacional de Aceleradores	
Country	Spain	Teleph. number	+34-954460553
Key words	Environmental radioactivity, radiochemistry, radioactive waste, radioactive tracers, Accelerator Mass Spectrometry, ^{129}I .		

A.2. Previous positions (research activity interruptions, indicate total months)

Period	Position/Institution/Country/Interruption cause
17/11/2000-22/09/2024	Profesor asociado. Universidad de Sevilla.
23/09/2004-27/10/2009	Profesor Contratado Doctor. Universidad de Sevilla.

A.3. Education

PhD, Licensed, Graduate	University/Country	Year
Graduate in Physics	Universidad de Sevilla	1994
PhD in Physics	Universidad de Sevilla	1999

(Include all the necessary rows)

Part B. CV SUMMARY (max. 5000 characters, including spaces)

My research career has been linked from the beginning to accelerator techniques and specifically to Accelerator Mass Spectrometry (AMS), within the Applied Nuclear Physics research group led by Professor Manuel García León. I defended my PhD thesis in 1999, after having done part of it at the Institute of Particle Physics of ETH Zurich, in the group of Prof. Martin Suter. It was the first doctoral thesis carried out in Spain on this technique. Since then, I have published more than 50 works on the subject and I have continuously participated in competitive research projects, being co-principal investigator of several of them. My scientific contribution has been specifically focused on the detection of long-half-life radionuclides in the environment, especially ^{129}I . We have provided information on the evolution of its presence in different areas of the planet and in different compartments, the different sources of this isotope emitted into the environment and its role as a long-term indicator of the radioactive impact of accidents such as Fukushima. Early work was devoted to the design of radiochemical methods and the measurement of ^{129}I in environmental samples such as rainwater, atmospheric filters and sediments. Throughout the following years, research on the role of environmental tracer of ^{129}I continued with work that deepened the study of the origin of its presence in the environment and its transport in the biosphere, for example in atmospheric samples or in marine sedimentary cores, applying models that related the measured values with artificial emissions and marine currents. At the same time, I have contributed to the development of the AMS technique in Spain, being directly involved in the installation of the first AMS system at the National Accelerator Center in 2005 and the second (MICADAS) in 2012. Since then, my research has developed into three main lines. First, in the development of the 1MV AMS facility



at CNA for the detection of new radionuclides or new detection techniques (with PhD theses directed on ^{41}Ca and ^{10}Be , among others). Secondly, to the application of this technique to the characterization of radioactive waste. Finally, I have continued working on the study of environmental radioactivity and its application to natural processes as shown by the recent research projects PGC2018-094546-B-I00 and US-1263369, of which I was co-principal researcher. In total, I have been co-principal investigator of five competitive research projects at national and regional level. I have been Deputy Director of CNA between January 2019 and February 2024, when I was appointed Director of the center. I have four six-year research periods and one six-year transference period.

In addition to research projects, I have directed contracts with companies, including those carried out with the company ENRESA, aimed at the application of AMS to the characterization of radioactive waste, as commented before. These contracts have been financed in total with more than 350000 euros. Thanks to them, we have developed technology that allows us to measure, with much greater sensitivity than radiometric techniques, the activity of radionuclides relevant to the management of nuclear waste such as ^{129}I , ^{239}Pu , ^{240}Pu , etc. From an academic point of view, I have been the director of seven research projects or master's theses and four doctoral theses. I am currently supervising two more doctoral theses. All PhD graduates who have completed their doctoral thesis at the CNA have continued their careers in research, both in Spanish and foreign public institutions and in private companies related to accelerator technology. This shows that the training obtained is of high quality. Throughout my career I have also regularly participated in the review of research articles in quality journals such as *Science of Total Environment* or *Environmental Science & Technology*. Until recently, I have also been part of the quality committee of the PhD program in Physical Sciences and Technologies at the University of Seville.

Part C. RELEVANT MERITS (sorted by typology)

C.1. Publications (see instructions)

1. Gómez-Camacho, J., García López, J., Guerrero, C. *et al.* Research facilities and highlights at the Centro Nacional de Aceleradores (CNA). *Eur. Phys. J. Plus* **136**, 273 (2021). <https://doi.org/10.1140/epjp/s13360-021-01253-x>
2. José María López-Gutiérrez, Deon C. Louw, Martina Rožmarić, Victoria Lérída-Toro, Tracing the upwelling process in the northern Benguela upwelling system (nBUS) by ^{129}I , *Chemosphere* 265 (2021) 129065, <https://doi.org/10.1016/j.chemosphere.2020.129065>.
3. Carlos Vivo-Vilches, José María López-Gutiérrez, Raúl Perriáñez, Charlotte Marcinko, Frédéric Le Moigne, Paul McGinnity, Juan Ignacio Peruchena, María Villa-Alfageme, Recent evolution of ^{129}I levels in the Nordic Seas and the North Atlantic Ocean. *Science of The Total Environment* 621 (2018) 376-386, <https://doi.org/10.1016/j.scitotenv.2017.11.268>.
4. Elena Chamizo, Mercedes López-Lora, María Villa, Núria Casacuberta, José María López-Gutiérrez, Mai Khanh Pham, Analysis of ^{236}U and plutonium isotopes, $^{239,240}\text{Pu}$, on the 1MV AMS system at the Centro Nacional de Aceleradores, as a potential tool in oceanography, *Nuclear Instruments and Methods in Physics Research Section B* 361 (2015) 535-540, <https://doi.org/10.1016/j.nimb.2015.02.066>.
5. Elena Chamizo Calvo, Francisco Javier Santos, José María López-Gutiérrez, Santiago Padilla, Manuel García-León, Jan Heinemeier, Christoph Schnabel, Grazia Scognamiglio, Status report of the 1MV AMS facility at the Centro Nacional de Aceleradores, *Nuclear Instruments and Methods in Physics Research Section B* 361 (2015) 13-19, <https://doi.org/10.1016/j.nimb.2015.02.022>.
6. Gómez-Guzmán, J.M., Holm, E., Niagolova, N., López-Gutiérrez, J.M., Pinto-Gómez, A.R., Abril, J.A., García-León, M. Influence of releases of ^{129}I and ^{137}Cs from European reprocessing facilities in *Fucus vesiculosus* and seawater from the Kattegat and Skagerrak areas (2014) *Chemosphere*, 108, pp. 76-84. <https://doi.org/10.1016/j.chemosphere.2014.03.018>
7. J.M. Gómez-Guzmán, P. Cámara-Mor, T. Suzuki, J.M. López-Gutiérrez, J.L. Mas, P. Masqué, S.B. Moran, J.N. Smith, New insights on the role of sea ice in intercepting



- atmospheric pollutants using ^{129}I . Marine Pollution Bulletin 89 (2014) 180-190. <https://doi.org/10.1016/j.marpolbul.2014.10.004>
8. J.M. Gómez-Guzmán, E. Holm, S.M. Enamorado-Báez, J.M. Abril, A.R. Pinto-Gómez, J.M. López-Gutiérrez, M. García-León, Pre- and post-Chernobyl accident levels of ^{129}I and ^{137}Cs in the Southern Baltic Sea by brown seaweed *Fucus vesiculosus*, Journal of Environmental Radioactivity 115 (2013) 134-142, <http://dx.doi.org/10.1016/j.jenvrad.2012.08.007>.
 9. J.M. Gómez-Guzmán, S.M. Enamorado-Báez, A.R. Pinto-Gómez, J.M. Abril-Hernández, J.M. López-Gutiérrez, M. García-León, Anthropogenic ^{129}I concentration and $^{129}\text{I}/^{127}\text{I}$ ratio in rainwater from Seville (Spain) in the period 2005–2008 as affected by airborne releases from Sellafield and La Hague facilities. Atmospheric Environment 56 (2012) 26-32. <https://doi.org/10.1016/j.atmosenv.2012.03.075>
 10. J.M. López Gutiérrez, M. García-León, Ch. Schnabel, M. Suter, H. -A. Synal, S. Szidat, R. García-Tenorio. Relative influence of ^{129}I sources in a sediment core from the Kattegat area. The Science of Total Environment 323, 1-3, 195-210 (2004). <https://doi.org/10.1016/j.scitotenv.2003.09.025>

C.2. Congress, indicating the modality of their participation (invited conference, oral presentation, poster)

1. J.M. López-Gutiérrez, J.I. Peruchena, G. Manjón, E. Liger, E. Gordo, F. Hernández. Origin of atmospheric ^{129}I in Southern Spain. 7th International Conference on Environmental Radioactivity – ENVIRA 2023. Seville, Spain, 17th-22nd September 2023. Oral.
2. J.M^a. López-Gutiérrez, E. Chamizo-Calvo, D. Sánchez-Jiménez. Characterization of nuclear waste by Accelerator Mass Spectrometry. International Conference on Accelerators for Research and Sustainable Development: From Good Practices Towards Socioeconomic Impact, Vienna, 23-27 May 2022. Oral.
3. López-Gutiérrez, José María; Peruchena, Juan Ignacio; Manjón Collado, Guillermo. Atmospheric gaseous and particulate ^{129}I in Seville (Spain). 15th International Conference on Accelerator Mass Spectrometry, November 15th – 19th, 2021, Sidney (Australia). Oral (online).
4. Abascal-Ruiz U, López-Gutiérrez JM, Yu W, Villa-Alfageme M. ^{129}I and ^{137}Cs as dual tracers: From Japan Sea to the Fram Strait. 15th International Conference on Accelerator Mass Spectrometry, November 15th – 19th, 2021, Sidney (Australia). Oral (online).
5. López-Gutiérrez, J. M.; Villa-Alfageme, María; Ceballos Romero, E.; Kenna, T. ^{129}I concentrations in the Southern Hemisphere. 14th International Conference on Accelerator Mass Spectrometry, Ottawa (Canada), 14th to 18th August 2017. Oral.
6. J.M. López Gutiérrez, M. García-León, R. García-Tenorio, Ch. Schnabel, M. Suter, H. -A. J.M. López-Gutiérrez, E. Chamizo, J.M. Torres. Determination of ^{241}Am , ^{243}Am and ^{239}Pu , ^{240}Pu in nuclear residues at the Centro Nacional de Aceleradores. 14th International Conference on Accelerator Mass Spectrometry, Ottawa (Canada), 14th to 18th August 2017. Poster.
7. José María López-Gutiérrez, María Villa-Alfageme, Charlotte Marcinko, Frédéric Le Moigne, Paul McGinnity, Raúl Periañez, Juan Ignacio Peruchena. Recent evolution of ^{129}I levels in the Arctic and North Atlantic Oceans. 13th International Conference on Accelerator Mass Spectrometry. Aix-en-Provence, August 2014.
8. J.M. López-Gutiérrez, M. Villa-Alfageme, J.I. Peruchena, Ch. Schnabel, Ch. Marcinko, P. McGinnity. ^{129}I concentrations in surface and deep seawater from the Irish Sea and the Atlantic Ocean. Conference Goldschmidt 2013, Florencia 25-30 August 2013. Poster.
9. J.M. Gómez-Guzmán, J.M. López-Gutiérrez, A.R. Pinto, E. Holm and M. García-León. Accelerator Mass Spectrometry of ^{129}I in lichens by a MW-based sample preparation method. 11th International Conference on Accelerators Mass Spectrometry (AMS-11) Rome, Italy, September 14-19, 2008. Poster.



10. J.M. López Gutiérrez, F.J. Santos, M. García-León, Ch. Schnabel, H. -A. Synal, Th. Ernst, S. Szidat. Levels and behaviour of 129I in atmospheric samples from Southern Spain. 9th International Conference on Accelerator Mass Spectrometry. Nagoya (Japan). September 2002. Oral.

C.3. Research projects, indicating your personal contribution. In the case of young researchers, indicate lines of research for which they have been responsible.

- Nuevos desarrollos de la Espectrometría de Masas con Aceleradores de Baja Energía (LEAMS) para su aplicación a nuevos problemas ambientales y de gestión de residuos nucleares. **Responsible:** Manuel García León / **José María López Gutiérrez**. Type of project: Plan Estatal 2021-2023 - Proyectos Investigación No Orientada. Reference: PID2022-140680NB-I00. From 01-09-2023 to 31-08-2026. Ministerio de Ciencia e Innovación.
- Buscando los Límites en Espectrometría Masas con Acelerador de Baja Energía (Leams) en el Centro Nacional de Aceleradores (CNA): Métodos y Aplicaciones. **Responsible:** Rafael García-Tenorio García-Balmaseda / **José María López Gutiérrez**. Type of project: Plan Estatal 2017-2020 Generación Conocimiento - Proyectos I+D+i. Reference: PGC2018-094546-B-I00. Budget: 205.700,00 €. From: 01-01-2019. To: 31-12-2021.
- AMS and radiometrically determined radionuclides as tracers of natural processes in the Arctic and Southern Oceans. **Responsible:** María Villa Alfageme / **José María López Gutiérrez**. Type of project: Proyectos I+D+i FEDER Andalucía 2014-2020. Reference: US-1263369. Budget: 80.000,00 €. From: 01-02-2020. To: 31-01-2022.
- Equipamiento para laboratorio de preparación de muestras no ambientales en el Centro Nacional de Aceleradores (CNA). EQC2019-005898-P. MINISTERIO DE CIENCIA, INNOVACIÓN Y UNIVERSIDADES. 2019. 138.173,59 €. **Responsible:** **José María López Gutiérrez**.
- Mejora de las capacidades del sistema de Espectrometría de Masas con Aceleradores del Centro Nacional de Aceleradores. EQC2018-004095-P. MINISTERIO DE CIENCIA, INNOVACIÓN Y UNIVERSIDADES. 2018. 157,260.00 €. **Responsible:** **José María López Gutiérrez**.
- Resolución de Problemas Ambientales Marinos y Terrestres Clave Mediante Nuevos Desarrollos en Espectrometría de Masas con Acelerador de Baja Energía (Leams) en el CNA. **Responsible:** Rafael García-Tenorio García-Balmaseda / **José María López Gutiérrez**. Type of project: Plan Estatal 2013-2016 Excelencia - Proyectos I+D. Reference: FIS2015-69673-P. Budget: 142.296 €. From: 01-01-2016. To: 30-04-2019.
- Uso de la Tecnología de Aceleradores de Partículas en la Caracterización de Residuos Nucleares. **Responsible:** **José María López Gutiérrez**. Type of project: Proyectos de Excelencia de la Junta de Andalucía. Reference: P10-FQM-5956. Budget: 167780 €. From: 15-03-2011. To: 14-06-2015.

C.4. Contracts, technological or transfer merits, Include patents and other industrial or intellectual property activities (contracts, licenses, agreements, etc.) in which you have collaborated. Indicate: a) the order of signature of authors; b) reference; c) title; d) priority countries; e) date; f) Entity and companies that exploit the patent or similar information, if any.

- Desarrollo de espectrometría de masas con aceleradores (AMS): Establecimiento metodología para CI-36 y Ca-41, consolidación de las técnicas para U-234, U-235, U-236, U-238, NP-237 y AM-243, y desarrollo de la medida de C-14 en líquidos. **Responsible:** **José María López Gutiérrez**. Contrato 68/83. Reference: 3788/0223. From 04-02-2020 to 03-02-2024. Financed by ENRESA. Budget: 234609,32 €.
- Detección de 36Cl, 243Am y 236U mediante Espectrometría de Masas con Aceleradores de baja energía. Contrato 68/83, Duración: del 22/07/2011 al 31/12/2011, Referencia: 1274/0223, Budget: 53218.00 €. Financed by ENRESA. **Responsible:** **José María López Gutiérrez**.
- Nuevos desarrollos de metodologías en AMS de baja energía. Contrato 68/83, Duración: del 15/04/2010 al 31/12/2010, Referencia: 0775/0223, Budget: 49500.0 €. Financed by ENRESA. **Responsible:** **José María López Gutiérrez**.