

Fecha del CVA	13/04/2023
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Parte A. DATOS PERSONALES

Nombre	Bruno		
Apellidos	Olaizola Mampaso		
Sexo	No Contesta	Fecha de Nacimiento	
DNI/NIE/Pasaporte			
URL Web			
Dirección Email			
Open Researcher and Contributor ID (ORCID)	0000-0003-1604-0640		

A.1. Situación profesional actual

Puesto	Contratado Ramon y Cajal		
Fecha inicio	2023		
Organismo / Institución	Consejo Superior de Investigaciones Científicas		
Departamento / Centro			
País	España	Teléfono	
Palabras clave	Física nx -- física nuclear experimental		

A.2. Situación profesional anterior (incluye interrupciones en la carrera investigadora - indicar meses totales, según texto convocatoria-)

Periodo	Puesto / Institución / País
2020 - 2022	Senior Fellow / CERN / Suiza
2017 - 2020	Postdoctoral Fellow / TRIUMF / Canadá

Parte B. RESUMEN DEL CV

I am a nuclear physicist that performs decay experiments to unravel the structure of the atomic nucleus. Some of the topics my experiments cover are the test of the Shell model, shape coexistence or the search for exotic decay modes. I mainly conduct these experiments at large international facilities able to produce radioactive beams, such as TRIUMF or CERN.

I obtained my Ph.D. in Nuclear physics in 2013 at the Universidad Complutense de Madrid and was awarded the maximum qualification (cum laude), a European Doctor commendation and the first "ATI-GEFN-RSEF" award to the best Spanish Nuclear physics thesis 2013. My thesis yielded four articles, all published in the top journals in my field.

Following my PhD, I continued to Postdoctoral positions at the University of Guelph, Canada (2014-2017) and TRIUMF, Canada (2017-2020), establishing my prominent role in experimental nuclear structure and I was able to develop independent research. During these periods, I became the chair of the Fast-Timing group for the GRIFFIN collaboration, the state-of-the-art beta-decay spectrometer. Specifically, I played a key role in its installation, set-up, and commission. Today, I remain an active member of the collaboration, with three experiments awaiting to run.

During the period 2020-2022 I was a CERN Senior Fellow (Switzerland), a highly prestigious, international, and extremely competitive grant awarded to perform independent research at CERN. My position included working on the Superconducting Solenoid and Decay Station setups, performing different beta decay and nuclear reaction experiments. In addition, I am the coordinator for all HIE-ISOLDE (reaccelerated beams) experiments.

Recently I started my new position as a Ramon y Cajal fellow at the Instituto de Estructura de la Materia, at CSIC, Spain. The fellowship included 142k€ as funding to start developing my own research group. Simultaneously, I have applied for additional funding at the national level, and I am preparing applications at the international one.

I have 71 articles indexed in the ISI web of Knowledge, with 586 citations, of which only 80 are self-citations. I have an average of 8.25 citations per article and an H-index of 14. I am the first author in 8 of the manuscripts and a leading author in another 6. I have participated in 26 international conferences (21 oral presentations, 5 posters). I have been an invited speaker in 6 of them, including the prestigious Bormio or Cocoyoc symposiums on Nuclear Physics. I am also a reviewer for Physics Review C, Letters and Nuclear Instrument and Methods A, among others.

I also have 17 approved experimental proposals. These are experimental projects that I have written in collaboration with my extended network of peers, and only one of them with my supervisor at the time. All these experiments require of exotic radioactive beams, which are costly and very limited. As such, it must be approved by an international committee of experts in competitive calls. All 17 have been approved with high priority, the maximum awarded. Seven of these experiments have already run and are currently being analyzed by several students and postdocs. The remaining ensure that my projects will still generate data to analyze for years to come.

I have supervised 14 undergraduate students and co-supervised 1 honor, 3 masters and 2 PhD theses. I am currently supervising another 3 master thesis and a PhD student will join my group in the following months. Most of these students analyzed data from experiments based on my experimental proposals.

Lastly, I recently obtained the certification “Profesor Contratado Doctor” from the Spanish ANECA, and the I3 Spanish Certificate of Research Excellence, thanks to my CERN fellowship.

Parte C. LISTADO DE APORTACIONES MÁS RELEVANTES

C.1. Publicaciones más importantes en libros y revistas con “peer review” y conferencias

AC: Autor de correspondencia; (n° x / n° y): posición firma solicitante / total autores. Si aplica, indique el número de citas

- 1 **Artículo científico.** Rocchini, M.; Garrett, P. E.; Zielinski, M.; et al; Zidar, T.; Olaizola, B.(9/44). 2023. First Evidence of Axial Shape Asymmetry and Configuration Coexistence in ^{74}Zn : Suggestion for a Northern Extension of the $N=40$ Island of Inversion. Phys. Rev. Lett.American Physical Society. 130, pp.122502-122502. <https://doi.org/10.1103/PhysRevLett.130.122502>
- 2 **Artículo científico.** Ayyad, Y.; Mittag, W.; Tang, T.; et al; Yates, D.; Olaizola, B.(4/23). 2022. Evidence of a near-threshold resonance in ^{11}B relevant to the β -delayed proton emission of ^{11}Be . Phys. Rev. Lett.American Physical Society. 123-8, pp.082501. <https://doi.org/10.1103/PhysRevLett.123.082501>
- 3 **Artículo científico.** Olaizola, B. (AC); Babu, A.; Umashankar, R.; et al; Zidar, T.(1/24). 2021. ^{145}Ba and $^{145,146}\text{La}$ structure from lifetime measurements. Phys. Rev. C. American Physical Society. 104, pp.034307-034307. <https://doi.org/10.1103/PhysRevC.104.034307>
- 4 **Artículo científico.** Ayyad, Y.; Olaizola, B.; Mittag, W.; et al; Yates, D.(2/). 2019. Direct Observation of Proton Emission in ^{11}Be . Phys. Rev. Lett.American Physical Society. 123, pp.082501-082501. Google scholar (13)
- 5 **Artículo científico.** Olaizola, B. (AC); Garnsworthy, A. B.; Ali, F. A.; et al; Zidar, T.(1/). 2019. Shape coexistence in the neutron-deficient lead region: A systematic study of lifetimes in the even-even 188--200Hg with the GRIFFIN spectrometer at TRIUMF. Phys. Rev. C. American Physical Society. 100, pp.024301-024301. Google scholar (4) <https://doi.org/10.1103/PhysRevC.100.024301>

- 6 **Artículo científico.** Olaizola, B. (AC); Fraile, L. M.; Mach, H.; et al; Udías, J. M.(1/). 2019. Properties of low-lying states in ^{65}Co from lifetime measurements. Phys. Rev. C. American Physical Society. 99, pp.024321-024321. <https://doi.org/10.1103/PhysRevC.99.024321>
- 7 **Artículo científico.** Garnsworthy, A.B.; Svensson, C.E.; Bowry, M.; et al; Zidar, T.2019. The GRIFFIN facility for Decay-Spectroscopy studies at TRIUMF-ISAC. Nucl. Instrum. Methods Phys. Res. A. 918, pp.9-29. ISSN 0168-9002. Google scholar (15)
- 8 **Artículo científico.** Williams, M.; Davids, B.; Lotay, G.; et al; Yates, D.; Olaizola, B.(20/25). 2023. Cross sections of the $^{83}\text{Rb}(p,\gamma)^{84}\text{Sr}$ and $^{84}\text{Kr}(p,\gamma)^{85}\text{Rb}$ reactions at energies characteristic of the astrophysical γ process. Phys. Rev. C. American Physical Society. 107, pp.035803-035803.
- 9 **Artículo científico.** Sharma, S.; Grinyer, G. F.; Ball, G. C.; et al; Zidar, T.2022. High-precision half-life determination of ^{14}O via direct β counting. The European Physical Journal A. Springer. 58-5, pp.1-8.
- 10 **Artículo científico.** Henderson, J.; Hackman, G.; Ruotsalainen, P.; et al; Wu, C. Y.2022. Coulomb excitation of the $T_z = \frac{1}{2}$, $A=23$ mirror pair. Phys. Rev. C. American Physical Society. 105, pp.034332-034332.
- 11 **Artículo científico.** Gillespie, S. A.; Henderson, J.; Abrahams, K.; et al; Zidar, T.2021. Coulomb excitation of $^{80,82}\text{Kr}$ and a change in structure approaching $N=Z=40$. Phys. Rev. C. American Physical Society. 104, pp.044313-044313.
- 12 **Artículo científico.** Piersa-Silnikowska, M.; Korgul, A.; Benito, J.; Fraile, L. M.; Olaizola, B.2021. First β -decay spectroscopy of ^{135}In and new β -decay branches of ^{134}In . Phys. Rev. C. American Physical Society. 104, pp.044328-044328.
- 13 **Artículo científico.** Lotay, G.; Gillespie, S. A.; Williams, M.; et al; Davids, B.2021. First Direct Measurement of an Astrophysical p -Process Reaction Cross Section Using a Radioactive Ion Beam. Phys. Rev. Lett. American Physical Society. 127, pp.112701-112701. <https://doi.org/10.1103/PhysRevLett.127.112701>
- 14 **Artículo científico.** Bowry, M.; Jones, C. E.; Garnsworthy, A. B.; et al; Svensson, C. E.; Olaizola, B.(10/13). 2021. Decay spectroscopy of ^{50}Sc and ^{50m}Sc to ^{50}Ti . Phys. Rev. C. American Physical Society. 104, pp.024314-024314.
- 15 **Artículo científico.** Sekal, S.; Fraile, L. M.; Licifmmode $\text{u}\{a\}\text{else}\ \text{u}\{a\}\text{fi}\}$, R.; et al; Stroe, L.; Olaizola, B.(23/30). 2021. Low-spin states in ^{80}Ge populated in the β decay of the ^{80}Ga $3^+\beta^-$ isomer. Phys. Rev. C. American Physical Society. 104, pp.024317-024317.
- 16 **Artículo científico.** Garcia, F. H.; Andreoiu, C.; Ball, G. C.; et al; Zidar, T.2021. Spectroscopic studies of neutron-rich ^{129}In and its β -decay daughter, ^{129}Sn , using the GRIFFIN spectrometer. Phys. Rev. C. American Physical Society. 103, pp.024310-024310.
- 17 **Artículo científico.** Burbadge, C; Kasanda, E; Bildstein, V; Dublin, G; Olaizola, B; Höhr, C; Mücher, D. 2021. Proton therapy range verification method via delayed gamma-ray spectroscopy of a molybdenum tumour marker. Physics in Medicine & Biology. {IOP} Publishing. 66-2, pp.025005-025005.
- 18 **Artículo científico.** MacLean, A. D.; Laffoley, A. T.; Svensson, C. E.; et al; Zidar, T.2020. High-precision branching ratio measurement and spin assignment implications for ^{62}Ga superallowed β decay. Phys. Rev. C. American Physical Society. 102, pp.054325-054325.
- 19 **Artículo científico.** Smith, J. K.; Garnsworthy, A. B.; Pore, J. L.; et al; Yates, S. W.2020. Spectroscopic study of ^{47}Ca from the β -decay of ^{47}K . Phys. Rev. C. American Physical Society. 102, pp.054314-054314.
- 20 **Artículo científico.** Garcia, F. H.; Andreoiu, C.; Ball, G. C.; et al; Yates, D.2020. Absence of Low-Energy Shape Coexistence in ^{80}Ge : The Nonobservation of a Proposed Excited 0_2^+ Level at 639 keV. Phys. Rev. Lett. American Physical Society. 125, pp.172501-172501.

- 21 Artículo científico.** Whitmore, K.; Andreoiu, C.; Garcia, F. H.; et al; Zidar, T.2020. Beta decay of ^{132}In and spectroscopy of ^{132}Sn and ^{131}Sb with the GRIFFIN spectrometer. Phys. Rev. C. American Physical Society. 102, pp.024327-024327.
- 22 Artículo científico.** Ortner, K.; Andreoiu, C.; Spieker, M.; et al; Zidar, T.2020. Collective 2p-2h intruder states in ^{118}Sn studied via beta decay of ^{118}In using the GRIFFIN spectrometer at TRIUMF. Phys. Rev. C. American Physical Society. 102, pp.024323-024323.
- 23 Artículo científico.** Saito, Y.; Dillmann, I.; Krücken, R.; et al; Zidar, T.2020. Decay spectroscopy of ^{129}Cd . Phys. Rev. C. American Physical Society. 102, pp.024337-024337.
- 24 Artículo científico.** Benito, J.; Fraile, L. M.; Korgul, A.; et al; Warr, N.2020. Detailed spectroscopy of doubly magic ^{132}Sn . Phys. Rev. C. American Physical Society. 102, pp.014328-014328.
- 25 Artículo científico.** Pazyi, V.; Fraile, L. M.; Mach, H.; et al; Walters, W. B.; Olaizola, B.(4/). 2020. Fast-timing study of ^{81}Ga from the beta decay of ^{81}Zn . Phys. Rev. C. American Physical Society. 102, pp.014329-014329.
- 26 Artículo científico.** Pore, J. L.; Andreoiu, C.; Smith, J. K.; et al; Yates, S. W.2019. Detailed spectroscopy of ^{46}Ca : A study of the beta- decay of ^{46}K . Phys. Rev. C. American Physical Society. 100, pp.054327-054327.
- 27 Artículo científico.** Dunlop, R.; Svensson, C. E.; Andreoiu, C.; et al; Zidar, T.2019. beta decay and beta -delayed neutron decay of the N=82 nucleus ^{131}In . Phys. Rev. C. American Physical Society. 99, pp.045805-045805.
- 28 Artículo científico.** Piersa, M.; Korgul, A.; Fraile, L. M.; et al; Warr, N.2019. Beta decay of ^{133}In : gamma emission from neutron-unbound states in ^{133}Sn . Phys. Rev. C. American Physical Society. 99, pp.024304-024304.
- 29 Artículo científico.** Bowry, M.; Jones, C.E.; Garnsworthy, A.B.; et al; Svensson, C.E.2019. Decay spectroscopy of ^{50}Sc and ^{50m}Sc to ^{50}Ti . Phys. Rev. C (submitted).
- 30 Artículo científico.** Chester, A.; Smallcombe, J.; Henderson, J.; et al; Yates, D.2019. TRIFIC: The TRIUMF Fast Ion Counter. Nucl. Instrum. Methods Phys. Res. A. 930, pp.1-7. ISSN 0168-9002.
- 31 Artículo científico.** Williams, J.; Andreoiu, C.; Ball, G.C.; et al; Wu, F.2019. The CsI ball ancillary detector array for TIP and TIGRESS at TRIUMF. Nucl. Instrum. Methods Phys. Res. A. 939, pp.1-9. ISSN 0168-9002.

C.3. Proyectos o líneas de investigación

- 1 Proyecto.** RYC2021-031494-I, Fast-timing studies of exotic nuclei with implications for multidisciplinary research. Ramon y Cajal. Olaizola Olaizola Mampaso. (Instituto de Estructura de la Materia). 01/01/2023-31/12/2027. 42.000 €. Investigador principal.
- 2 Proyecto.** 20235AT018, Studying nuclear shapes using beta decay. Proyecto Intramural. Olaizola Olaizola Mampaso. (Instituto de Estructura de la Materia). 01/09/2023-31/08/2026. 100.000 €. Investigador principal.