



## CURRICULUM VITAE (CVA)

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

Part A. PERSONAL INFORMATION		CV date	15-06-2022
First name	Ángel Miguel		
Family name	Sánchez Benítez		
Gender (*)	male	Birth date (dd/mm/yyyy)	07/11/1974
Social Security, Passport, ID number	44229200Q		
e-mail	angel.sanchez@dfaie.uhu.es	URLWeb	<a href="https://www.uhu.es/fmc/member/16">https://www.uhu.es/fmc/member/16</a>
Open Researcher and Contributor ID (ORCID) (*)	0000-0002-5779-3502		

(\*) Mandatory

### A.1. Current position

Position	Profesor Titular de Universidad		
Initial date	14-5-2018		
Institution	Universidad de Huelva		
Department/Center	Ciencias Integradas	Facultad Ciencias Integradas	
Country	Spain	Teleph. number	959219799
Key words	Dynamics and structure of halo nuclei, Nuclear Astrophysics, Nuclear instrumentation, Monte Carlo simulation		

### A.2. Previous positions (research activity interruptions, art. 14.2.b))

Period	Position/Institution/Country/Interruption cause
07/2001 - 09/2005	PhD FPI/Univ. Huelva/Spain
10/2005 - 12/2005	PhD/Univ. Sevilla/Spain
03/2006 - 08/2007	Postdoctoral fellow/Univ. cat. Louvain/Belgium
09/2007 - 08/2009	Postdoctoral fellow/Univ. Granada/Spain
09/2009 - 08/2012	Postdoctoral fellow "Juan de la Cierva"/Univ. Huelva/Spain
09/2012 - 03/2013	Postdoctoral fellow/Univ. Huelva/Spain
04/2013 - 08/2013	Postdoctoral fellow/Laboratory GSI/Germany
09/2013 - 11/2013	Postdoctoral fellow/Laboratory GANIL/France
12/2013 - 05/2015	"Investigador Ciência" FCT/Centro de Física Nuclear/Portugal
06/2015 - 06/2016	Profesor Ayudante Doctor/Univ. Huelva/Spain
07/2016 - 05/2018	Profesor Contratado Doctor/Univ. Huelva/Spain

### A.3. Education

PhD, Licensed, Graduate	University/Country	Year
Degree on Physics	Univ. Sevilla/Spain	2000
PhD on Nuclear Physics	Univ. Huelva/Spain	2005

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

I was awarded the prize for the best PhD dissertation in the field of Experimental Sciences and Health of the Univ. of Huelva, and the AIQB Chair award (Association of Basic Chemical Industries, Huelva) in the Scientific-Technological field. I was a postdoctoral researcher at the Center de Recherches du Cyclotron (Louvain-la-Neuve, Belgium). I continued with a two-years postdoctoral contract developed



between the Univ. of Granada and the Univ. of Huelva within the project “Physics of Elementary Particles: Theory and Experiment”. In 2009 I got a Juan de la Cierva contract for two years to develop at the Univ. de Huelva. During 2013 I enjoyed contracts in GANIL (Caen, France) and GSI (Darmstadt, Germany), within the framework of the Nuclear Astrophysics Virtual Institute (NAVI). At the end of 2013 he began to work at the Center for Nuclear Physics of the University of Lisbon with a contract of “Investigador Ciência”, FCT-Portugal. I have collaborated with the Juan Ramón Jiménez Hospital (Huelva) in neutron dose measurements in the vicinity of an ONCOR-Siemens electron accelerator to radiotherapy (2011). I have been spokesperson for the experiment “Charge symmetry breaking in elastic scattering involving  $^{15}\text{O}$  and  $^{15}\text{N}$ ”(CRC/UCL, Belgium) (2006). I have been responsible for two bilateral projects France- Spain entitled "Spectroscopic study of nuclei involved in explosive burning hydrogen "(Refs: AIC10-D-000614 2011, AIC-D-2011-0820 2012), and has participated in three European projects: “Physics of compact objects: explosive nucleosynthesis and evolution (09-EuroGENESIS-FP-004), SPIRAL2 Preparatory Phase FP7 (FP7-spiral2- 212692) and Nuclear Astrophysics Virtual Institute (NAVI) (VH-VI-417). I am responsible, scientific and technical, of the Laboratorio de Interacciones Fundamentales (LIFE), a infrastructure of the Center of Advanced Studies in Physics, Mathematics and Computing (CEAFMC) of the University of Huelva. I am secretary of the CEAFMC since 2018. I was secretary of department “Ciencias Integradas” of the University of Huelva 2018-2020. Member of the Scientific Council of the bilateral project “ASTRANUCAP” which involves dozens of institutions and laboratories in France and Spain. I have been involved in scientific dissemination tasks and events like Night of the European Researchers. I have supervised more than 5 Master Thesis, some of them performed by international students (Portugal, Mexico) who later pursued PhD studies (Mexico). Main lines of research: i) Study of nuclear reactions to energies around the Coulomb barrier of neutron-rich weakly bound exotic nuclei, such as  $^6\text{He}$ ,  $^8\text{He}$ ,  $^{11}\text{Li}$ ,  $^{11}\text{Be}$ ; ii) Design and construction of particle detectors, such as DINEX and GLORIA (highly segmented charged particle detectors), SAND (fast neutrons, with 32 modules); iii) Measurement of resonant contributions to the rate of thermonuclear reaction in nova explosions, "X-ray Burster" and SNe II type supernovas. I have three “sexenios de investigación” 2002-2007, 2008-2013, 2014-2019.

## Part C. RELEVANT MERITS (sorted by typology)

### C.1. Publications (see instructions)

- (01) R. Sparta, A. DiPietro, P.Figuera[...]S.Viñals (21/23), “Probing proton halo effects in the  $^8\text{B}+^{64}\text{Zn}$  collision around the Coulomb barrier”. Physics Letters B 820 136477-9 (2021). DOI: 10.1016/j.physletb.2021.136477
- (02) A. Pakou, O.Sgouros, V.Soukeras[...] D.Torresi (11/14), “Proton inelastic scattering in inverse kinematics as a mean for determining decay rates in continuum: The  $^9\text{Be} + p$  case”. Nuclear Physics A 1008 122155-17 (2021) . DOI: 10.1016/j.nuclphysa.2021.122155
- (03) A. Pakou , L. Acosta, P. D. O’Malley[...]G. Souliotis (22/26), “Dominance of direct reaction channels at deep sub-barrier energies for weakly bound nuclei on heavy targets: The case  $^8\text{B}+^{208}\text{Pb}$ ”. Physical Review C 102 031601(R)-5 (2020). DOI: 10.1103/PhysRevC.102.031601
- (04) F. J. Ferrer, B. Fernández, J. P. Fernández-García[...]A. M. Sánchez-Benítez (9/9), “Novel solid  $^4\text{He}$  targets for experimental studies on nuclear reactions:  $^6\text{Li} + ^4\text{He}$  differential cross-section measurement at incident energy of 5.5 MeV”. EPJ Plus 916 135:465 (2020). DOI:10.1140/epjp/s13360-020-00482-w
- (05) D. Kostyleva, I. Mukha, L. Acosta[...]M. V. Zhukov (34/48), “Towards the Limits of Existence of Nuclear Structure: Observation and First Spectroscopy of the Isotope  $^{31}\text{K}$  by Measuring Its Three-Proton Decay”. Physical Review Letters 123 092502-5 (2019). DOI: 10.1103/PhysRevLett.123.092502
- (06) L. Lamia, M. Mazzocco, R. G. Pizzone[...]G. L. Zhang. (31/41), “Cross-section Measurement of the Cosmologically Relevant  $^7\text{Be}(n,\alpha)^4\text{He}$  Reaction over a Broad Energy Range in a Single Experiment”. The Astrophysical Journal 879 23-8 (2019). DOI: 10.3847/1538-4357/ab2234
- (07) G. Marquínez-Durán, I. Martel,A. M. Sánchez-Benítez[N. Keeley]Z. Abou-Haidar (3/38), “Interaction of  $^8\text{He}$  with  $^{208}\text{Pb}$  at near-barrier energies:  $^4\text{He}$  and  $^6\text{He}$  production”. Physical Review C 98 034615-7 (2018). DOI: 10.1103/PhysRevC.98.034615
- (08) V. Pesudo, M. J. G. Borge, A. M. Moro[...]Z. M. Wang (33/38), “Scattering of the Halo Nucleus  $^{11}\text{Be}$  on  $^{197}\text{Au}$  at Energies around the Coulomb Barrier”. Physical Review Letters 118 152502-6 (2017). DOI: 10.1103/PhysRevLett.118.152502



- (09) I. Mukha, L. V. Grigorenko, X. Xu[...]M. V. Zhukov(34/48), “Observation and Spectroscopy of New Proton-Unbound Isotopes  $^{30}\text{Ar}$  and  $^{29}\text{Cl}$ : An Interplay of Prompt Two-Proton and Sequential Decay”. *Physical Review Letters* 115 202501-7 (2015). DOI: 10.1103/PhysRevLett.115.202501
- (10) S. Benamara, N. de Séréville, A. M. Laird[...]M. Vandebrouck(17/21), “Nucleosynthesis of  $^{26}\text{Al}$  in massive stars: New  $^{27}\text{Al}$  states above  $\alpha$  and neutron emission threshold”. *Physical Review C* 89 065805-9 (2014). DOI: 10.1103/PhysRevC.89.065805

## C.2. Congress

**AUTHORS:** D. Godos-Valencia 1, L. Acosta 1, P. Ascher 2, B. Blank 2, J. Giovinazzo 2, A. M. Sánchez-Benítez

**TITLE:** Spectroscopy of key nuclei in astrophysics by beta-delayed proton emission

**CONTRIBUTION:** Oral

**CONFERENCE:** VI Workshop of the Hellenic Institute of Nuclear Physics

**VENUE:** ON-LINE

**DATES:** 14-15/05/2021

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**AUTHORS:** A. M. Sánchez-Benítez, G. Marquínez-Durán, I. Martel, K. Rusek, N. Keeley, K. W. Kemper, E587s Collaboration.

**TITLE:** “Borromean nuclei  $6\text{He}$  and  $8\text{He}$  elastic scattering with heavy targets at near-barrier energies”

**CONTRIBUTION:** Oral.

**CONFERENCE:** XX Colloque GANIL 2017.

**VENUE:** Amboise, France.

**DATES:** 15-20/10/2017

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**AUTHORS:** A. M. Sánchez-Benítez, F. de Oliveira Santos, B. Blank, J. Giovinazzo, Lol-16-18@GANIL Collaboration.

**TITLE:** “Spectroscopy of key nuclei in astrophysics by beta-delayed proton emission”

**CONTRIBUTION:** Poster.

**CONFERENCE:** XX Colloque GANIL 2017.

**VENUE:** Amboise, France.

**DATES:** 15-20/10/2017

## C.3. Research projects

(1) **Title:** Astrofísica y Estructura Cuántica de la Materia (PY2000764)

**Fundig Institution:** Junta de Andalucía

**Institutions:** Universidad Pablo Olavide, Universidad de Sevilla y Universidad de Huelva

**Period:** 01/01/2021 - 31/12/2022

**Budget:** 40000 €

**PI:** Ángel Miguel Sánchez Benítez (Univ. de Huelva)

(2) **Title:** FÍSICA NUCLEAR EN SUCESOS ESTELARES CATACLÍSMICOS: INPUTS BÁSICOS EN LA EXPLOSIÓN Y NUCLEOSÍNTESIS ESTELAR (PGC2018-096994-B-C22)

**Fundig Institution:** Ministerio de Ciencia, Innovación y Universidades

**Institutions:** Universidad de Huelva, Universidad de Sevilla

**Period:** 01/01/2019 – 31/12/2021

**Budget:** 24000 €

**PI Subproject:** Ángel Miguel Sánchez Benítez (Univ. de Huelva).

(3) **Title:** Equipamiento básico para el Laboratorio de Interacciones Fundamentales (LIFE) del CEAFCM-UHU (EQC2018-004395-P)

**Fundig Institution:** Ministerio de Ciencia, Innovación y Universidades

**Institutions:** Universidad de Huelva

**Period:** 01/01/2019 – 31/03/2021

**Budget:** 88424 €



**PI:** Ángel Miguel Sánchez Benítez (Univ. de Huelva)

(4) **Title:** Laboratorio de Interacciones Fundamentales (CEAFMC)

(Ref: IE17-5380-UHU)

**Funding Institution:** Junta de Andalucía, PAIDI 2020

**Institutions** Universidad de Huelva

**Period:** 01/01/2020 - 31/12/2021

**Budget:** 80000 €

**PI:** Ángel Miguel Sánchez Benítez (Univ. de Huelva)

(5) **Title:** Investigación nuclear en medidas de reacciones de interés astrofísico (Ref: UHU-1264004)

**Funding Institution:** Plan Propio Universidad de Huelva

**Institutions** Universidad de Huelva

**Period:** 01/01/2020 - 31/12/2021

**Budget:** 10000 €

**PI:** Ángel Miguel Sánchez Benítez (Univ. de Huelva)

#### **C.4. Contracts, technological or transfer merits**

(1) Collaboration with Technological spin-off. Tharsis Technology S.L. Date: 2011.

(2) Book Chapter "Spanish Science Industry (your reliable partner) -.- Particle Physics (ISBN:978-84-694-6761-9)". Date: 2011. Pages 193-203. Title: "Design and Construction of Innovative Detector System for Particle Spectroscopy Using Accelerated Radioactive Beams" (7/13).

(3) Collaboration with research group "Atención Integral al Paciente Oncológico (CTS 616)" in Hospital Juan Ramón Jiménez, Huelva. Date: 2011.

#### **C.5. Thesis Advisor**

Title: Elastic scattering of  $^8\text{He}$  by heavy targets at energies close to Coulomb barrier.

Student: Gloria Marquínez Durán. Date 2016.

Supervisors: Ismael Martel Bravo, Ángel Miguel Sánchez Benítez.

Institution: Universidad de Huelva.

#### **C.6. Awards**

(1) Premio Extraordinario de Doctorado de la Universidad de Huelva correspondiente al curso académico 2005-2006 en el área de Ciencias Experimentales y de la Salud.

(2) Premio Cátedra AIQB a Tesis Doctorales en el Área Científico-Tecnológica. Fecha: 2008

#### **C.7. Evaluation**

.- Evaluator "Juan de la Cierva" contracts, sub-area FPN, 2019 (Agencia Estatal de Investigación)

.- Evaluator "María Zambrano" contracts. Universidad Autónoma de Madrid. 2021.

.- Evaluator "Proyectos de Generación de Conocimiento 2021". (Agencia Estatal de Investigación).

#### **C.8. Referee**

.- European Physical Journal A.

.- Physics Letters B.

#### **C.9. Scientific Committees**

.- Member of the Scientific Council of the bilateral project "ASTRANUCAP" between France and Spain.