

Part A. Personal Information

DATE	4-12-2019
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Surname(s)	Ruiz Arriola	
Forename	Enrique	
Social Security, Passport, ID number	276506674P	
Sex	Male	
Age	57	
Researcher codes	WoS Researcher ID (*)	A-9388-2015
	SCOPUS Author ID(*)	
	Open Researcher and Contributor ID (ORCID)	000-0002-9570-2552

(*) At least one of these is mandatory

A.1. Current position

Post/ Professional Category	Full professor in Atomic, Molecular and Nuclear Physics	
UNESCO Code	20704, 220712, 220703, 220710, 220923	
Key Words	Nuclear Physics, Hadronic Physics	
Name of the University/Institution	Universidad de Granada	
	Department/Centre	Física Atómica, Molecular y Nuclear, Fac. Ciencias
	Full Address	Avda Fuentenueva s/n
	Email Address	earriola@ugr.es
	Phone Number	958246170
Start date	October 2000	

A.2. Education (title, institution, date)

Year	University	Degree	Title
1985	Granada	First degree	Degree in Physics
1986	Granada	Masters (if appropriate)	Master in Physics
1990	Bochum	PhD	Doctor in Physics

A.3. Indicators of Quality in Scientific Production (See the instructions)

- a) total number of citations in WOS: 5006
- b) average number of citations during the last five years (2014-2018) 127/year
- c) total number of publications in the first quartile (Q1) =108 (from a total of 220 in WOS)
- c) h-index = 36
- d) 7 PhD thesis supervised

Part B. Free Summary of CV (Max. of 3.500 characters, including spaces)

Positions and activities performed. I did my degree at the University of Granada (UGR) in 1985 . I did my Thesis PhD at the Institut für Theoretische Physik, Ruhr-Universität Bochum (Germany) 1985-1990 under the supervision of Klaus Goeke and financed by the Deutsche Forschungs-Gemeinschaft (DFG). For this thesis I obtained the prize "Preis an Studenten", endowed with DM 500. I was Associate Professor (1990-91), Interim Professor (1991-92) and Professor (1992-2000) at UGR. I was a Visiting Professor in the National Instituut voor Kern- en Hoge Energie Fysica (NIKHEF), (Amsterdam,Netherlands) in 1994-1995 financed by the Fundamenteel Onderzoek derMaterie (FOM) Dutch. I am full Professor since 2000 at the UGR.

I speak, read and write German and English (fluent), Dutch (medium) and French (basic).
My topics of research have been Nuclear and Hadronic Physics: (some keywords) Group of renormalization in nuclear interactions, nuclear correlations, nucleon-nucleon interaction, error analysis, nuclear structure by ultra-relativistic heavy ion reactions, Quantum

Chromodynamics to finite temperature, Polyakov Loop, effective theories in Hadronic Physics at intermediate energies, hadronic resonances, chiral symmetry, developments of a large number of colors, single, double and generalized parton distributions and amplitudes.

Diffusion,talks and congresses in numbers

- 34 seminars in national or foreign research centers or universities
- 78+ attendance at international congresses
- 67+ oral communications presented in person to international congresses,
- 40 research stays in scientific institutions over 1 week and less than 1 month
- Lecturer in International Schools: Zakopane (Poland 2014), Andree Swiecka (Brazil, 2017), HUGS (JLAB, USA, 2017)

Regular exchanges with Institutions and their researchers

- Institute of Nuclear Theory (Krakow, Poland) W. Broniowski.
- Jefferson National Laboratory (Virginia, USA) J.L. Goity.
- Universidade de Campinas (Brazil) V. S. Timoteo.

Research Projects,Management and Teaching

- Participation 27 research projects.
- IP of 4 national projects.
- Organization of 3 international scientific meetings
- Regular teaching at the UGR full time 53 subjects (bachelor's or degree) of Physics and 35 Doctorate or Master courses (3320 and 725 hours respectively).
- Founding professor of the FISYMAT program and member of its scientific committee.
- Referee on 45 occasions of the magazines in which I publish.
- I have evaluated projects for the ANECA (2), the German DFG (2), the South African NRF (2), the US DOE (2) and the Argentine CONICET (1).

Part C. Relevant accomplishments

C.1. Publications

1. Signatures of alpha clustering in light nuclei from relativistic nuclear collisions W. Broniowski, E. Ruiz Arriola. **Phys.Rev.Lett. 112 (2014) 112501. (selected by the editor, Sinopsis in Physics)**
2. Coarse-grained potential analysis of neutron-proton and proton-proton scattering below the pion production threshold R.Navarro Pérez, J.E. Amaro, E. Ruiz Arriola. **Phys.Rev.C88(2013)6,064002. (selected by the editor)**
3. Large-Nc Properties of the rho and f0(600) Mesons from Unitary Resonance Chiral Dynamics J. Nieves, A. Pich, E. Ruiz Arriola. **Phys.Rev. D84 (2011) 096002.**
4. Couplings in coupled channels versus wave functions: application to the X(3872) resonance D. Gamermann, J. Nieves, E. Oset, E. Ruiz Arriola.**Phys.Rev. D81(2010) 014029.**
5. The Polyakov loop and the hadron resonance gas model E. Megias, E. Ruiz Arriola, L.L. Salcedo.**Phys.Rev.Lett. 109 (2012) 151601.**
6. Generalized parton distributions of the pion in chiral quark models and their QCD evolution.W. Broniowski, E. Ruiz Arriola, K. Golec-Biernat.**Phys.Rev. D77 (2008) 034023.**
7. Renormalization of chiral two-pion exchange NN interactions. momentum versus coordinate space. D.R. Entem, E. Ruiz Arriola, M. Pavon Valderrama,R.Machleidt. **Phys.Rev.C77(2008)044006.**
- 8.Low energy universality and scaling of Van der Waals forces. A.Calle Cordon, E. RuizArriola.**Phys.Rev.A81(2010)044701.**
9. Precise Determination of Charge Dependent Pion-Nucleon-Nucleon Coupling Constants R. Navarro Perez, J.E. Amaro, E. Ruiz Arriola. **Phys. Rev. C95 (2017) no.6, 064001.**
- 10.Axial-vector dominance predictions in quasielastic neutrino-nucleus scattering J.E.Amaro, E. Ruiz Arriola. **Phys.Rev. D93 (2016) no.5, 053002.**

C.2. Research Projects and Grants

1. FIS2017-85053-C2-1 Dinámica de sistemas hadrónicos en física nuclear a energías intermedias, MINECO project

IP: Enrique Ruiz Arriola (Universidad de Granada)

From 1-1-2018 to 31-12-2020.

Funding: 70000 euros for 6 researchers

2. FIS2014-59386P Dinámica de sistemas hadrónicos en física nuclear a energías intermedias, MINECO project

IP: Enrique Ruiz Arriola (Universidad de Granada)

From 1-1-2014 to 31-12-2017.

Funding: 70000 euros for 6 researchers

3. FIS2011-24149 Dinámica de sistemas hadrónicos en física nuclear a energías intermedias, MINECO project.

IP: Enrique Ruiz Arriola (Universidad de Granada)

From 1-1-2012 to 31-12-2014.

Funding: 108000 euros for 5 researchers

4. DGICYT-FIS2009-13364-C02-01 Dinámica de sistemas hadrónicos en física nuclear a energías intermedias, MICCIN project.

IP: Enrique Ruiz Arriola (Universidad de Granada)

From 1-1-2009 to 31-12-2013.

Funding: 96800 euros for 6 researchers

5. CPAN (Centro Nacional de Física de Partículas, Astropartículas y Nuclear).

IP: A.Pich (IFIC. Universidad de Valencia) Consolider Project MEC, 2008-2014.

From 2008-2014

Funding: 10.000.000 euros for about 250 researchers

C.3. Contracts

C.4. Patents and other IPR

C.5. PhD and master Thesis supervised (including post-doc)

1. Desarrollos semiclasicos en Física Nuclear Relativista. Jose Caro Ramon, (co-supervised with L. L. Salcedo). Universidad de Granada, 1996. (Postdoc in Munich 1997-98. Currently in División de Sistemas Avanzados. Sistemas Globales de Navegación por Satélite (GMV) 1999-2017

2. La Interacción Nucleon-Nucleon en Teorías Efectivas. Manuel Pavon Valderrama, Universidad de Granada 2006. (Postdocs in Krakow 2006, Juelich 2007-09, Valencia 2010-11, Paris-2012-14, Peking 2016-2021 (1000 talents fellow)

3. Efectos de Temperatura Finita y Curvatura en QCD y Modelos de Quarks Quirales. Eugenio Megías Fernandez, (co-supervised L. L. Salcedo) Universidad de Granada. 2006 (Postdocs: Brookhaven 2007-08, Heidelberg 2009-10, Madrid 2011, Barcelona 2012-14, Munich 2015-16 (Marie Curie Fellow), Bilbao 2016-17.

Ramón y Cajal fellow in Granada (starting-2017).

4. Renormalization of One-Boson-Exchange Interactions in the two-Nucleon system. Alvaro Calle Cordon, Universidad de Granada. 2010 (Postdocs in JLAB 2011-2013, Murcia 2014).

5. Error analysis of the Nuclear Force. Rodrigo Navarro Pérez (co-supervised with. J. E. Amaro Soriano). Universidad de Granada 2015 (Postdocs in Lawrence National Lab (Livermore) 2015-17, Athens, Ohio, 2017-2019).

Ruhr-Universität (Bochum, Germany)

I was supervisor (betreuer) in the Institut für Theoretische Physik II, Ruhr-Universität Bochum (Germany) of Master thesis (Diplomarbeit)

1. Baryonzahl und Windungszahl im selbstkonsistenten Nambu–Jona- Lasinio Modell, Dagmar Berg (October 1990) Diplomarbeit

2. Einführung des omega - Mesons in das Nambu–Jona-Lasinio Modell Cornelia Schüren (March 1991).

and PhD theses (Doktorarbeit)

1. Das Soliton eines effektiven Modells der QCD mit Vektormesonen. Cornelia Schuren (July 1994).

2. Vectorial couplings in the Nambu–Jona-Lasinio model: vacuum,meson and baryon properties Frank Döring (July 1994.)

Master Theses in Granada

1. Desarrollo en derivadas de acciones efectivas a un loop y aplicaciones. (Co-supervised with L.L. Salcedo) . Jose Caro Ramón (November 1995).

2. Restauracion de Invariancia Relativista en Solitones en 1+1 dimensiones en Teoria Cuantica de Campos. Jorge Martin Sierra. (December 2001).

3. Desarrollo del Heat Kernel a Temperatura Finita. Accion Efectiva de QCD y Modelos Quark Quirales. (Co-supervised with L.L. Salcedo). Eugenio Megías Fernández.(September 2003).

4. Regularizacion de la Dispersion Nucleon-Nucleon mediante una Condicion de Contorno. Manuel Pavón Valderrama. (September 2003).

5. Renormalizacion de Interacciones Atomicas mediante Condiciones de Contorno. Alvaro Calle Cordón. (December 2007).

6. Solucion al problema de Campos Hipecriticos mediante condiciones de frontera. Rodrigo Navarro Pérez.(July 2010).

7. Interacción neutrón protón en ondas S con potencial óptico granulado hasta 3GeV Pedro Fernández Soler. (September 2014).

8. Partícula α : interacción y agregación en núcleos ligeros (Co-supervised with J.E. Amaro) Antonio Márquez Romero . Granada. Septiembre 2015

C.6 Popular science

I have written the book “**La Materia extrema**”, RBA , 2016 , 180 pag. ISBN: 978-84-473-8567-6 belonging to the series “Un paseo por el Cosmos” ,translated into italian Una passeggiata nel cosmo (RBA) and french “Un voyage dans le cosmos” (Le monde) , and has been published in Spain, Italy,France,Chile and Argentina