MINISTERIO DE CIENCIA, INNOVACIÓN Y UNIVERSIDADES

CURRICULUM VITAE (maximum 4 pages)

AGENCIA ESTATAL DE INVESTIGACIÓN

Part A. PERSONAL INFORMATION

CV date	17/03/2020

First and Family name	Roberto Vega-Morales		
Social Security, Passport, ID number		Age	
Researcher codes	WoS Researcher ID *(*)*	AAA-8156-2019	
	SCOPUS Author ID*(*)*	26665207600	
	Open Researcher and Contributor ID (ORCID) **	0000-0003-1070-5461	

(*) At least one of these is mandatory
(**) Mandatory

A.1. Current position

Name of University/Institution	Universidad de Granada			
Department	Departamento de Física Teórica y del Cosmos			
Address and Country	Ed. Mecenas, Campus Fuente Nueva, 18003, Granada (Spain)			
Phone number	+34 958249036	E-mail	rvegamorales@ugr.es	
Current position	Profesor Contratado Doctor		From	11/12/2019
Key words	Beyond the Standard Model Physics, Dark Matter, Inflation, Collider Phenomenology, Effective Field Theory			

A.2. Education

PhD	University	Year
Physics (B.S.)	University of Michigan	2004
Theoretical Physics (Ph.D.)	Northwestern University	2013

A.3. JCR articles, h Index, thesis supervised…

Scopus database
Total Number of Citations: 607
Citations per year (2009-2019): 60.7
Total Number of Publications: 28
Number of publications in Q1: 17
h-index: 15

WoS database
Total Number of Citations: 442
Citations per year (2009-2019): 44.20
Total Number of Publications: 27
Number of publications in Q1: 17
h-index: 15

Inspire database (http://inspirehep.net/author/profile/R.Vega.Morales.1)
Total Number of citaitons:1560.
Average citations per article: 47.3
h-index: 21

Part B. CV SUMMARY *(max. 3500 characters, including spaces)*

I obtained my bachelors of science degree in Physics in 2004 from the University of Michigan. I obtained my PhD in theoretical particle physics in 2013 from Northwestern University. For the last year of my PhD I received a Fermilab graduate student research fellowship which was awarded to only 5 students from universities around the United States. During my year at Fermilab I conducted research on the Higgs boson which became the basis for my PhD thesis for which I received the 2014 J.J. and Noriko Sakurai Dissertation Award, which is awarded to one student per year at a university in the United States for best thesis of that year.

During my time as a graduate student at Northwestern University I taught a number of introductory physics courses. This included classical mechanics, electricity and magnetism, as well as waves, heat, and light. As part of my teaching I lectured on the physics and showed students how to solve problems. I instructed the students on how to conduct simple experiments to test the physics that was being learned in the course. I also helped students individually with problem solving in addition to teaching large groups of students during class hours.

From September 2013 until August 2015 I held a post-doctoral position at the Laboratoire de Physique Théorique in Orsay France. In that time I became heavily involved with the CMS collaboration at CERN in studies of the Higgs boson decays to leptons. I was responsible for analytically computing expressions for the differential cross sections for the Higgs boson decay to four leptons as well as the dominant background which were used as the basis for a CMS analysis of the Higgs boson couplings to electroweak gauge bosons. This lead me to be an author on the CMS publication of this study (http://journals.aps.org/prd/abstract/10.1103/PhysRevD.92.012004). From September 2015 until December 2019 I was a post-doctoral researcher at the University of Granada where I continued my research of the Higgs boson and LHC phenomenology as well started new research directions related to dark matter and cosmology. Since December 2019 I have held the position of profesor contratado doctor (associate professor) at the University of Granada and continue along these research directions.

From my research I have authored 33 papers with collaborators in Europe, United States, and Canada. Of these papers, 7 of have over 50 citations and 4 have over 100 according to the INSPIRE data base: http://inspirehep.net/author/profile/R.Vega.Morales.1. I have presented 45 talks and seminars at various conferences and universities in both Europe and the United States. These works have so far earned a total of 1560 citations and an h-index of 21.

Part C. RELEVANT MERITS

C.1. Publications (including books)

1. “Vector dark matter production from the end of inflation”, M. Bastero-Gil, J. Santiago, L. Ubaldi, R. Vega-Morales, JCAP 1904 (2019) 015 [26 citations]

2. “Golden Probe of Electroweak Symmetry Breaking”, Y. Chen, J. Lykken, M. Spiropulu, D. Stolarski, R. Vega-Morales, Phys. Rev. Lett. 117, 241801 (2016) (Editors suggestion) [8 citations]

3. “New vector bosons and the diphoton excess”, J. de Blas, J. Santiago, R. Vega-Morales, Phys. Lett. B 759, (2016) [127 citations]

4. “Constraints on the spin-parity and anomalous HVV couplings of the Higgs boson in proton collisions at 7 and 8 TeV”, CMS Collaboration, Phys.Rev. D92 (2015) 1, 012004 [423 citations]

5. “New Observables for CP Violation in Higgs Decays”, Y. Chen, A. Falkowski, I. Low, R. Vega-Morales, Phys. Rev. D 90, (2014) 113006 [45 citations]

6. “Probing the Higgs Couplings to Photons in h to 4l at the LHC”, Y. Chen, R. Harnik, R. Vega-Morales, Phys. Rev. Lett. 113, (2014) 191801 [48 citations]

7. “Scrutinizing the Higgs Signal and Background in the 2e2mu Golden Channel”, Y. Chen, N. Tran, R. Vega-Morales, JHEP 1301, 182 (2013) [55 citations]

8. “Directly Measuring the Tensor Structure of the Scalar Coupling to Gauge Bosons”, D. Stolarski, R. Vega-Morales, Phys. Rev. D 86, (2012) 117504 [84 citations]

9. “Improving the Sensitivity of Higgs Boson Searches in the Golden Channel”, J. Gainer, K. Kumar, I. Low, R. Vega-Morales, JHEP 1111, 027 (2011) [51 citations]

10. “Manifistations of Top Compositeness at Colliders”, K. Kumar, T. Tait, R. Vega-Morales, JHEP 0905, 022 (2009) [100 citations]

C.2. Research projects and grants

Referencia del proyecto: Grant agreement ID: ERC Advanced Grant Higgs@LHC
Título: Search and study of the Higgs bosons at the LHC
Investigador principal (nombre y apellidos): Abdelhak Djouadi
Entidad financiadora: Union Europea
Duración (fecha inicio - fecha fin, en formato DD/MM/AAAA): 01/02/2013 - 28/02/2018
Financiación recibida (en euros): 1.160.005

Referencia del proyecto: FPA2013-47836-C3-2-P
Título: Implicaciones de nueva fısica en colisionadores de alta energia
Investigador principal (nombre y apellidos): Juan Antonio Aguilar Saavedra, Jose Santiago
Entidad financiadora: Ministerio de Economía y Competitividad
Duración (fecha inicio - fecha fin, en formato DD/MM/AAAA): 1/1/2014-31/12/2017
Financiación recibida (en euros): 85.000

Referencia del proyecto: FPA2013-47836-C3-3-P
Título: QCD y nueva fisica con astroparticulas
Investigador principal (nombre y apellidos): Manuel Masip Mellado, José Ignacio Illana Calero
Entidad financiadora: Ministerio de Economía y Competitividad
Duración (fecha inicio - fecha fin, en formato DD/MM/AAAA): 01/01/2014 – 31/12/2017
Financiación recibida (en euros): 70.000

Referencia del proyecto: FPA2016-78220-C3-1-P
Título: Calculos precisos y fenomenologia en grandes colisionadores y observatorios de astroparticulas
Investigador principal (nombre y apellidos): Juan Antonio Aguilar Saavedra, Manuel Pérez-Victoria
Entidad financiadora: Ministerio de Economía y Competitividad
Duración (fecha inicio - fecha fin, en formato DD/MM/AAAA): 30/12/2016 –29/12/2019
Financiación recibida (en euros): 145.200

C.3. Supervision experience

Supervisor of 1 Master Thesis: Miguel Angel Martinez Garcia (2018).

C.4. Reviewer experience

Referee for Physical Review D

C.5 Awards

J.J. and Noriko Sakurai Dissertation Award in Theoretical Particle Physics: 2014. Awarded by the American Physical Society.