

c v n CURRÍCULUM VITAE NORMALIZADO



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Summary of CV

This section describes briefly a summary of your career in science, academic and research; the main scientific and technological achievements and goals in your line of research in the medium -and long- term. It also includes other important aspects or peculiarities.

From 01/10/2019, I am pursuing post-doctoral studies on the Florence Particle Physics and Cosmology Group at INFN-Firenze. Previously (from 01/10/2017), I was hosted at the T30f group in the TUM (Munich) with a post-doctoral grant from the Ramon Areces Foundation.

I obtained my habilitation as "Prof. Contratado Doctor" and "Prof. de Univ. Privada" on 07/2018. I have several research interests, including lattice QCD and NRQCD, LHC-phenom. of dark matter models and BSM physics related with the EW sector, and condensed matter physics. Before my post-doc at TUM, I collaborated with Prof.F.Sols and Dr.I.Zapata under a short-term research contract in a project related with condensed matter (Anderson's model). On top of that, I obtained my Master in Teaching (UNED) and spent Nov-2016 at SLAC invited by prof. Stanley Brodsky.

On June 2016, I obtained my PhD in phenomenological High Energy Physics under the supervision of Profs.A.Dobado and F.J.Llanes-Estrada (UCM). I have won the Springer Theses Award and the PhD Extraordinary Award. I also obtained the habilitation as "Prof. Ayudante Doctor" on Nov. 2016.

I focused on the study of the phenomenology of a hypothetical EWSBS with strong interactions [1-3]. But I also have recent experience about the accelerator phenomenology of dark matter (DM) models [4]. I also enjoyed a summer grant at the IFT/UAM whose topic was an exhaustive bibliographic research about the bounds on primordial black holes as constituents of DM. Indeed, my PhD research in LHC phenomenology has given me both the computational and the analytical tools which are required to deal with collider physics, but also with cosmic ray and experiments like IceCube, Pierre Auger,...

As part of my PhD program, I spent 3 months and a week at the University of Southampton and Abingdon, Oxford, for a collaboration with prof. Stefano Moretti about the accelerator phenomenology of composite Higgs models (using a modified version of MadGraph). And I have been hosted by prof. Thomas Hahn at the Max Planck Institut für Physik in Munich during 3 months. I was granted computer time on the Spanish supercomputing network.

Regarding my PhD topic (a strongly interacting EWSBS), what makes me stand out is that I am not specifying a particular model. Instead, non-linear effective field theories (EFTs) at the Next to Leading order are used to parametrize the dynamics of the EWSBS constituents. The EFTs validity range of validity is extended by using model independent analytical properties (encoded



in dispersion relations) of the S-matrix, by means of the so-called unitarization procedures. This approach has been used successfully for the low-energy regime of QCD. See, for instance, [5].

EFTs themselves are widely used as a way to parametrize slight deviations from the SM in the 0.5TeV scale. See the works from O.Catà, G.Buchalla, R. Alonso, M.B.Gavela, L.Merlo, R.Contino, C.Grojean, C.Krause,... You could also refer to the CERN's Yellow Report [6], which I have also contributed to, and points out the huge interest in this field.

BIBLIOG.

[1] PRD91 (2015) 075017

[2] PRL114 (2015) n.22, 221803

[3] J.Phys.G41 (2014) 025002, year's highlight of the journal and journal cover.

[4] PRD88 (2013) 075021

[5] PRD56 (1997) 3057-3073

[6] D. de Florian et al., Handbook of LHC Higgs cross sections: 4, arXiv:1610.07922 [hep-ph]

General quality indicators of scientific research

This section describes briefly the main quality indicators of scientific production (periods of research activity, experience in supervising doctoral theses, total citations, articles in journals of the first quartile, H index...). It also includes other important aspects or peculiarities.

Articles in INSPIRE-HEP: 29
Total number of citations: 1,333
h-index: 10
Source: INSPIRE-HEP

Articles in WoS (Web of Science ResearcherID: L-5768-2014): 29
Total number of citations: 196
h-index excluding self-cites: 7
Source: WoS

Springer Theses Award, PhD Extraordinary Award.
Editor of the report of the VBSCan Mid-Term Scientific Meeting Contribution to a CERN Yellow Report of the LHCHXSWG Collaboration with 1681 citations.
Publication selected for the "Highlights of 2014" of Journal of Physics G.

==> IMPORTANT NOTE <==

All the publications referred on this CV can be accessed via the provided DOI, by using the official URL <https://www.doi.org/> . This way of accessing an on-line publication is internationally recognized through ISO26324:2012 standard. In case DOI is not available, I provide the publisher ad-hoc URL. The "number of pages" refers to the published journal version, which could differ from the e-print one due to journal format.

==> NOTA IMPORTANTE <==

Todas las publicaciones contenidas en este CV pueden ser accedidas a través del DOI (Digital Object Identifier), empleando la web oficial <https://www.doi.org/> . Esta forma de proporcionar acceso a una publicación on-line está reconocida internacionalmente mediante la norma ISO26324:2012. A través de UNE/AENOR, dicho estándar internacional ISO es reconocido oficialmente en España. En caso de que no haya DOI disponible, se proporciona la dirección web ad-hoc del editor. El "número de páginas" se refiere siempre a la versión publicada en la revista, que podría diferir del e-print por cuestiones de formato.

Current professional situation**Employing entity:** INFN Firenze**Type of entity:** Public Research Body**Professional category:** Post-doctoral fellow**Start date:** 01/10/2019**Type of contract:** Temporary employment contract**Dedication regime:** Full time**Primary (UNESCO code):** 220705 - Collision processes; 229001 - Theoretical Physics high-energy**Identify key words:** Experimental results; Future experiments; Teorias gauge en el reticulo y calculos [eng]; collider Signals; Extensions of standard model; Electroweak interaction; Perturbative QCD; Quantum field theory**Previous positions and activities**

	Employing entity	Professional category	Start date
1	Fundación Ramón Areces	Post-doctoral Fellowship	01/10/2017
2	Universidad Complutense de Madrid	Contracted by Project FIS2013-41716-P	01/07/2017
3	Universidad Complutense de Madrid	Graduate student: Contract under the FPI program / Contratado con cargo a Programa FPI	01/12/2014
4	Ministerio de Economía y Competitividad	FPI grant / becario FPI	01/12/2012
5	Consejo Superior de Investigaciones Científicas	Summer research grant / Beca JAE-Intro de Introducción a la Investigación	27/06/2011

1 **Employing entity:** Fundación Ramón Areces**Department:** T30f, TUM - Technische Universität München**City employing entity:** Munich, Oberbayern, Germany**Professional category:** Post-doctoral Fellowship **Educational Management (Yes/No):** No**Start-End date:** 01/10/2017 - 30/09/2019**Duration:** 2 years**Type of contract:** Grant-assisted student (pre or post-doctoral, others)**Identify key words:** Experimental results; quantum gravity; Teorias gauge en el reticulo y calculos [eng]; collider Signals; Extensions of standard model; Electroweak interaction; Perturbative QCD; Quantum field theory; Nuclear theory**2** **Employing entity:** Universidad Complutense de Madrid **Type of entity:** University**Department:** Física de Materiales, Facultad de Ciencias Físicas**City employing entity:** Madrid, Community of Madrid, Spain**Professional category:** Contracted by Project FIS2013-41716-P**Educational Management (Yes/No):** No**Start-End date:** 01/07/2017 - 30/09/2017**Duration:** 3 months



Type of contract: Temporary employment contract

Dedication regime: Full time

Performed tasks: Short contract by Project FIS2013-41716-P. Ending computations related with the project purposes.

3 **Employing entity:** Universidad Complutense de Madrid **Type of entity:** University

Professional category: Graduate student: Contract under the FPI program / Contratado con cargo a Programa FPI

Start-End date: 01/12/2014 - 01/12/2016

Duration: 2 years

4 **Employing entity:** Ministerio de Economía y Competitividad **Type of entity:** MINECO

Department: Departamento de Física Teórica I (UCM), Facultad de Ciencias Físicas

City employing entity: Madrid, Community of Madrid, Spain

Professional category: FPI grant / becario FPI

Phone: (34) 91394 - 5016

Start-End date: 01/12/2012 - 30/11/2014

Duration: 2 years

Type of contract: Grant-assisted student (pre or post-doctoral, others)

Dedication regime: Full time

5 **Employing entity:** Consejo Superior de Investigaciones Científicas **Type of entity:** State agency

Department: Instituto de Física Teórica

Professional category: Summer research grant / Beca JAE-Intro de Introducción a la Investigación

Start-End date: 27/06/2011 - 30/09/2011

Duration: 2 months

Type of contract: Grant-assisted student (pre or post-doctoral, others)

Dedication regime: Full time



Education

University education

1st and 2nd cycle studies and pre-Bologna degrees

University degree: Higher degree

Name of qualification: 5 years Degree in Physics (mark 9.63 over 10) / Licenciado en Ciencias Físicas

Degree awarding entity: Universidad Complutense de Madrid **Type of entity:** University

Date of qualification: 30/06/2012

Average mark: Outstanding

Prize: Special award for degree

Average mark: Outstanding

Doctorates

Doctorate programme: PhD in Physics / Programa Oficial de Doctorado en Física

Degree awarding entity: Universidad Complutense de Madrid **Type of entity:** University

City degree awarding entity: Madrid, Community of Madrid, Spain

Date of degree: 09/06/2016

European doctorate: Yes

Date of certificate: 09/06/2016

Thesis title: Study of the Electroweak Symmetry Breaking Sector // Estudio del Sector de Ruptura de Simetría Electro débil para el LHC

Thesis co-director: Antonio Dobado González; Felipe José Llanes Estrada

Obtained qualification: Sobresaliente "Cum Laude"

Recognition of quality: Yes

Special doctorate award: Yes

Date of award: 05/07/2017

Other postgraduate university studies

1 Type of education: Masters

Postgraduate qualification: Master in Teaching / Máster Universitario en Formación del Profesorado de Educación Secundaria Obligatoria y Bachillerato, Formación Profesional y Enseñanza de Idiomas

City degree awarding entity: Spain

Degree awarding entity: Universidad Nacional de Educación a Distancia **Type of entity:** University

Date of qualification: 12/11/2017

Obtained qualification: 8

2 Type of education: Masters

Postgraduate qualification: Master in Fundamental Physics / Máster en Física Fundamental

City degree awarding entity: Madrid, Community of Madrid, Spain

Type of entity: University



Degree awarding entity: Universidad Complutense de Madrid

Faculty, institute or centre: Facultad de Ciencias Físicas

Date of qualification: 30/06/2013

Obtained qualification: 9.87

Specialised, lifelong, technical, professional and refresher training (other than formal academic and healthcare studies)

- 1 Training title:** PRACE Course: Introduction to hybrid programming in HPC
Awarding entity: Partnership for Advanced Computing in Europe (PRACE)
End date: 29/01/2019 **Duration in hours:** 12 hours
- 2 Training title:** Introduction to the LRZ Supercomputing and Machine Learning Infraestructure
Awarding entity: Leibniz Supercomputing Centre (LRZ) **Type of entity:** University Research Institute
End date: 08/10/2018 **Duration in hours:** 6 hours
- 3 Training title:** PRACE Workhop: Intel Manycore Programming Workshop
Awarding entity: Partnership for Advanced Computing in Europe (PRACE) **Type of entity:** Foundation
End date: 18/07/2018 **Duration in hours:** 18 hours
- 4 Training title:** Fortran Modernization Workshop
Awarding entity: Leibniz Supercomputing Centre (LRZ) **Type of entity:** University Research Institute
End date: 05/06/2018 **Duration in hours:** 14 hours
- 5 Type of training:** Congress
Training title: Resummation, Evolution, Factorization 2017
Awarding entity: Universidad Complutense de Madrid **Type of entity:** University
End date: 16/11/2017 **Duration in hours:** 25 hours
- 6 Type of training:** Course
Training title: JOINT FGZ-PH Summer School on Methods of Effective Field Theory & Lattice Field Theory
City awarding entity: Garching, Germany
Awarding entity: TUM - Technische Universität München **Type of entity:** University
End date: 07/07/2017 **Duration in hours:** 186 hours
- 7 Type of training:** Meeting
Training title: Spanish LHC network meeting
City awarding entity: Madrid, Spain
Awarding entity: Red Española del LHC
End date: 09/05/2017 **Duration in hours:** 16 hours
- 8 Type of training:** Workshop
Training title: The Higgs Couplings 2016 Meeting
City awarding entity: Menlo Park, United States of America
Awarding entity: Stanford Linear Accelerator Center (SLAC)
End date: 12/11/2016 **Duration in hours:** 28 hours



- 9** **Type of training:** Workshop
Training title: Exotic Higgs Decay Meeting
City awarding entity: Menlo Park, United States of America
Awarding entity: Stanford Linear Accelerator Center (SLAC)
End date: 08/11/2016 **Duration in hours:** 16 hours
- 10** **Training title:** 12th Workshop of the LHCHSWG at CERN
Awarding entity: CERN **Type of entity:** R&D Centre
End date: 14/10/2016 **Duration in hours:** 24 hours
- 11** **Training title:** Preparatory Meeting of the LHC Higgs Cross Section Working Group
Awarding entity: CERN **Type of entity:** R&D Centre
End date: 08/07/2016 **Duration in hours:** 16 hours
- 12** **Type of training:** Course
Training title: Tutorial on Monte Carlo Tools for Colliders
City awarding entity: Cantoblanco, Community of Madrid, Spain
Awarding entity: Instituto de Física Teórica **Type of entity:** State agency
End date: 10/09/2015 **Duration in hours:** 12 hours
- 13** **Type of training:** Course
Training title: 2015 International Summer Workshop on Reaction Theory
City awarding entity: Bloomington, IN, United States of America
Awarding entity: Indiana University **Type of entity:** University
End date: 19/06/2015 **Duration in hours:** 76 hours
- 14** **Type of training:** Course
Training title: Training program of the 2nd BSC International Doctoral Symposium
Awarding entity: Centro Nacional de Supercomputación **Type of entity:** R&D Centre
End date: 06/05/2015 **Duration in hours:** 8 hours
- 15** **Type of training:** Course
Training title: Terascale Monte Carlo School 2014
City awarding entity: Hamburgo, Hamburg, Germany
Awarding entity: DESY **Type of entity:** R&D Centre
End date: 14/03/2014 **Duration in hours:** 24 hours
- 16** **Type of training:** Workshop
Training title: XLII International Meeting on Fundamental Physics
City awarding entity: Benasque, Aragon, Spain
Awarding entity: FUNDACION CENTRO DE CIENCIAS DE BENASQUE
Aims of the entity: Conocimiento del "estado del arte" en el campo de Altas Energías
End date: 01/02/2014 **Duration in hours:** 30 hours
- 17** **Type of training:** Conferencia
Training title: Progress in Computational Mathematics and its influence in other sciences/Avances en las Matemáticas Computacionales y su influencia en otras ciencias
City awarding entity: Madrid, Community of Madrid, Spain
Awarding entity: ADDLINK SOFTWARE CIENTIFICO, S.L.
Aims of the entity: Symbolic and numerica computation, use of Mathematica / Cálculo simbólico y numérico, uso de Mathematica



End date: 11/11/2013

Duration in hours: 6 hours

18 Type of training: Workshop

Training title: II Postgraduate Meeting on Theoretical Physics

Awarding entity: Instituto de Física Teórica

Type of entity: State agency

Aims of the entity: Formación orientada a Física de Altas Energías

End date: 11/10/2013

Duration in hours: 20 hours

19 Type of training: Course

Training title: Workshop in High Energy Physics 2013 / Taller de Altas Energías (TAE) 2013

City awarding entity: Benasque, Aragon, Spain

Awarding entity: FUNDACION CENTRO DE CIENCIAS DE BENASQUE

End date: 28/09/2013

Duration in hours: 71 hours

20 Training title: International Symposium: 'Alan Turing's Legacy' / Simposio Internacional: "El legado de Alan Turing"

Awarding entity: Fundación Ramón Areces

Type of entity: Foundation

Aims of the entity: Master studies: Quantum Information and Quantum Computation / Complemento de la asignatura "Información Cuántica y Computación Cuántica" del "Máster en Física Fundamental"

End date: 24/11/2012

Duration in hours: 12 hours

21 Type of training: Scientific Journey

Training title: Jornada Científica con ocasión del 70 cumpleaños del Profesor Sebastián Viera Díaz

Awarding entity: Universidad Autónoma de Madrid

Type of entity: University

Aims of the entity: Parte del progr. colab. con el prof. Fernando Sols (publicación en PRD y Trabajo Fin de Máster)

End date: 21/09/2012

Duration in hours: 5 hours

22 Type of training: Course

Training title: Workshop in High Energy Physics Complutense 2012 / Taller de Altas Energías Complutense (TAE) 2012

City awarding entity: Madrid, Community of Madrid, Spain

Awarding entity: Universidad Complutense de Madrid

Type of entity: University

End date: 27/07/2012

Duration in hours: 70 hours

23 Type of training: Course

Training title: Instrumental developments in Radioastronomy / Desarrollos instrumentales en Radioastronomía

Awarding entity: Universidad Nacional de Educación a Distancia

Type of entity: University

End date: 06/07/2012

Duration in hours: 20 hours

24 Type of training: Simposio

Training title: Symposium Quantum and Optical Dynamics in Transport Phenomena

Awarding entity: Centro de Física Miguel Antonio Catalán

Type of entity: State agency

Aims of the entity: Parte del progr. colab. con el prof. Fernando Sols (publicación en PRD y Trabajo Fin de Máster)

End date: 29/06/2012

Duration in hours: 6 hours

25 Type of training: Course

Training title: Popular and recreational astronomy: workshop, audiovisual, computational and radio broadcasting / Astronomía popular y recreativa: taller manual, audiovisual, informático y radiofónico



Awarding entity: Universidad de Alcalá
Training manager: Javier Bussons Gordo
End date: 22/07/2011

Type of entity: University
Duration in hours: 23 hours

- 26** **Type of training:** Course
Training title: Astroparticles summer workshop / Astropartículas: ¿de qué está hecho el universo?
Awarding entity: Universidad de Alcalá
Training manager: Javier Bussons Gordo
End date: 30/07/2010

Type of entity: University
Duration in hours: 25 hours

Language skills

Language	Listening skills	Reading skills	Spoken interaction	Speaking skills	Writing skills
English	B2	C1	B2	B2	B2

Teaching experience

General teaching experience

- 1** **Type of teaching:** Unofficial teaching
Name of the course: Métodos Estadísticos y Teóricos para el LHC
Type of programme: Doctorate
Type of subject: Doctorate
University degree: Theoretical Physics, Post-Graduate tutorial
Faculty, institute or centre: Facultad de Ciencias Físicas
Type of hours/ ECTS credits: Hours
Hours/ECTS credits: 8
Entity: Universidad Complutense de Madrid
Department: Departamento de Física Teórica
Department: Departamento de Física Teórica
Start date: 11/11/2019
- Type of teaching:** Practical work (classroom-problems)
Type of programme: Doctorate
Type of entity: University
End date: 20/11/2019
- 2** **Type of teaching:** Unofficial teaching
Name of the course: Métodos Estadísticos y Teóricos para el LHC
Type of programme: Engineering
Type of subject: Doctorate
University degree: Curso de Doctorado (docencia no reglada)
Faculty, institute or centre: Facultad de Ciencias Físicas
Type of hours/ ECTS credits: Hours
Hours/ECTS credits: 8
Entity: Universidad Complutense de Madrid
Start date: 11/11/2019
- Type of teaching:** Practical work (classroom-problems)
Type of programme: Engineering
Type of entity: University
End date: 14/11/2019
- 3** **Type of teaching:** Official teaching
Name of the course: Calculus / Cálculo
Type of teaching: Practical work (classroom-problems)
Type of subject: Obligatory



University degree: Degree in Physics / Grado en Física
Faculty, institute or centre: Facultad de Ciencias Físicas
Type of hours/ ECTS credits: Hours
Hours/ECTS credits: 5
Entity: Universidad Complutense de Madrid
Department: Física Teórica I
Department: Física Teórica I
Start date: 01/02/2016

Type of entity: University

End date: 01/06/2016

4 **Type of teaching:** Official teaching
Name of the course: Physics of Biological Processes / Física de los Procesos Biológicos
Type of teaching: Practical work (classroom-problems)
Type of subject: Obligatory
University degree: Degree in Biology / Grado en Biología
Faculty, institute or centre: Facultad de Ciencias Biológicas
Type of hours/ ECTS credits: Hours
Hours/ECTS credits: 15
Entity: Universidad Complutense de Madrid
Department: Física Teórica I
Department: Física Teórica I
Start date: 01/02/2016

Type of entity: University

End date: 01/06/2016

5 **Type of teaching:** Official teaching
Name of the course: Quantum Physics I / Física Cuántica I
Type of teaching: Practical work (classroom-problems)
Type of subject: Obligatory
University degree: Degree in Physics / Grado en Física
Faculty, institute or centre: Facultad de Ciencias Físicas
Type of hours/ ECTS credits: Hours
Hours/ECTS credits: 10
Entity: Universidad Complutense de Madrid
Department: Física Teórica I
Department: Física Teórica I
Start date: 01/02/2015

Type of entity: University

End date: 01/06/2015

6 **Type of teaching:** Official teaching
Name of the course: Calculus / Cálculo
Type of teaching: Practical work (classroom-problems)
Type of subject: Obligatory
University degree: Degree in Physics / Grado en Física
Faculty, institute or centre: Facultad de Ciencias Físicas
Type of hours/ ECTS credits: Hours
Hours/ECTS credits: 15
Entity: Universidad Complutense de Madrid
Department: Física Teórica I
Department: Física Teórica I
Start date: 01/02/2014

Type of entity: University

End date: 01/06/2014

7 **Type of teaching:** Official teaching
Name of the course: Physics of Biological Processes / Física de los Procesos Biológicos
Type of teaching: Practical work (classroom-problems)



Type of subject: Obligatory

University degree: Degree in Biology / Grado en Biología

Faculty, institute or centre: Facultad de Ciencias Biológicas

Type of hours/ ECTS credits: Hours

Hours/ECTS credits: 9

Entity: Universidad Complutense de Madrid

Type of entity: University

Department: Física Teórica I

Department: Física Teórica I

Start date: 01/02/2014

End date: 01/06/2014

8 Type of teaching: Official teaching

Name of the course: Quantum Physics I / Física Cuántica I

Type of teaching: Practical work (classroom-problems)

Type of subject: Obligatory

University degree: Degree in Physics / Grado en Física

Faculty, institute or centre: Facultad de Ciencias Físicas

Type of hours/ ECTS credits: Hours

Hours/ECTS credits: 10

Entity: Universidad Complutense de Madrid

Type of entity: University

Department: Física Teórica I

Department: Física Teórica I

Start date: 01/02/2014

End date: 01/06/2014

9 Type of teaching: Official teaching

Name of the course: Computational Laboratory of Nuclear and Particle Physics / Laboratorio Computacional de Física Nuclear y de Partículas

Type of teaching: Laboratory work

Type of subject: Core

University degree: 5 years Degree in Physics / Licenciatura en Ciencias Físicas

Faculty, institute or centre: Facultad de Ciencias Físicas

Type of hours/ ECTS credits: Hours

Hours/ECTS credits: 5

Entity: Universidad Complutense de Madrid

Type of entity: University

Department: Física Teórica I

Department: Física Teórica I

Start date: 01/10/2013

End date: 01/02/2014

Experience supervising doctoral thesis and/or final year projects

Project title: Signals of Dark Matter Self-Interaction via Massive Hidden Mediators

Type of project: End of course project

Co-director of thesis: Nora Brambilla; Rafael Delgado López

Entity: Physik-Department T30F, Technische Universität München **Type of entity:** University Department

City of entity: Garching, Oberbayern, Germany

Student: Florian Götz

Date of reading: 06/09/2018



Participation in innovative teaching projects

Project title: LHC@COMPLUTENSE

Type of participation: Team member

Name of the main researcher: Felipe José Llanes Estrada

Funding entity: Universidad Complutense de Madrid **Type of entity:** University

Start-End date: 01/09/2014 - 01/09/2016

Other activities/achievements not included above

Description of the activity: Teaching Practicum (215h) / Practicum I y II del Máster de Formación del Profesorado (215h)

Identify key words: Mathematics; Chemistry; Physics

City of activity: Guadalajara, Castile-La Mancha, Spain

Organising entity: Universidad Nacional de Educación a Distancia, Colegio Salesiano San José de Guadalajara

End date: 31/05/2017

Scientific and technological experience

Scientific or technological activities

R&D projects funded through competitive calls of public or private entities

- 1 Name of the project:** Teorías Efectivas en Física de Altas Energías y Cosmología
Type of project: Basic research (including archaeological digs, etc) **Geographical area:** National
Degree of contribution: Researcher
Name principal investigator (PI, Co-PI...): Antonio Dobado González; Juan José Sanz Cillero
Name of the programme: PROYECTOS DE I+D+i
Code according to the funding entity: PID2019-108655GB-I00
Start-End date: 01/06/2020 - 01/06/2023 **Duration:** 3 years
Total amount: 56.870 €
- 2 Name of the project:** Teorías Efectivas en Física de Partículas y Cosmología
Entity where project took place: Universidad Complutense de Madrid **Type of entity:** MINECO
City of entity: Madrid, Community of Madrid, Spain
Name principal investigator (PI, Co-PI...): Antonio Dobado González; Felipe J. Llanes-Estrada
Funding entity or bodies: Ministerio de Economía y Competitividad **Type of entity:** MINECO
Name of the programme: Proyectos de I+D de Excelencia 2016
Code according to the funding entity: FPA2016-75654-C2-1-P
Start-End date: 01/01/2017 - 01/01/2020 **Duration:** 3 years
Total amount: 86.000 €



Dedication regime: Full time

- 3** **Name of the project:** Teorías Efectivas en Física de Partículas y Cosmología
Entity where project took place: Universidad Complutense de Madrid **Type of entity:** MINECO
City of entity: Madrid, Community of Madrid, Spain
Name principal investigator (PI, Co-PI....): Antonio Dobado González; Felipe J. Llanes-Estrada
Funding entity or bodies: Ministerio de Economía y Competitividad **Type of entity:** MINECO
Name of the programme: Proyectos de I+D de Excelencia 2014
Code according to the funding entity: FPA2014-53375-C2-1-P
Start-End date: 01/01/2014 - 31/12/2016 **Duration:** 2 years
Total amount: 61.710 €
Dedication regime: Full time
- 4** **Name of the project:** Teorías Efectivas en Física Moderna
Entity where project took place: Universidad Complutense de Madrid **Type of entity:** University
City of entity: Madrid, Community of Madrid, Spain
Funding entity or bodies: Universidad Complutense de Madrid **Type of entity:** University
City funding entity: Madrid, Community of Madrid, Spain
Code according to the funding entity: UCM:910309
Start-End date: 01/12/2012 - 01/12/2016
- 5** **Name of the project:** Teorías Efectivas en Física de Partículas y Cosmología
Entity where project took place: Universidad Complutense de Madrid **Type of entity:** MINECO
City of entity: Madrid, Community of Madrid, Spain
Name principal investigator (PI, Co-PI....): Antonio Dobado González
Funding entity or bodies: Ministerio de Economía y Competitividad **Type of entity:** MINECO
Name of the programme: Proyectos de Investigación Fundamental No Orientada
Code according to the funding entity: FPA2011-27853-C02-01
Start-End date: 01/12/2012 - 31/12/2014
Total amount: 60.000 €
Dedication regime: Full time
- 6** **Name of the project:** Dinámica de átomos, moléculas y electrones dirigida por luz o sonido
Entity where project took place: Universidad Complutense de Madrid
Name principal investigator (PI, Co-PI....): Charles E. Creffield; Fernando Sols



Scientific and technological activities

Scientific production

Publications, scientific and technical documents

- 1** Rafael L. Delgado; Sebastian Steinbeißer; Michael Strickland; Johannes H. Weber. The Relativistic Schrödinger Equation through FFTW3: An Extension of quantumfddd. arXiv:2006.16935. pre-print, 30/06/2020.

Type of production: Scientific paper **Format:** Journal

Corresponding author: Yes

Relevant results: Source code on URL: https://github.com/quantumfddd/quantumfddd_v3 Article submitted to "Journal of Computational Physics"
- 2** Rafael Delgado López; Claudia García García; María José Herrero Solans. Dynamical vector resonances from the EChL in VBS at the LHC: the WW case. JHEP. 1911 - 065, 12/09/2019. ISSN 1029-8479

DOI: 10.1007/JHEP11(2019)065

Type of production: Scientific paper
- 3** Rafael Delgado López; Antonio Dobado; Domènec Espriu; Claudia García García; María Jesús Herrero; Xavier Marcano; Juan José Sanz Cillero. Production of vector resonances at the LHC via WZ-scattering: a unitarized EChL analysis. JHEP. 1711 - 098, pp. 1 - 48. Science Edition - PHYSICS, PARTICLES & FIELDSSpringer, 16/11/2017. ISSN 1029-8479

DOI: 10.1007/JHEP11(2017)098

Type of production: Scientific paper **Format:** Journal

Position of signature: 1 **Degree of contribution:** Author or co-author of article in journal with external admissions assessment committee

Total no. authors: 7

Impact source: ISI **Category:** Science Edition - PHYSICS, PARTICLES & FIELDS

Impact index in year of publication: 5.541 **Journal in the top 25%:** Yes

Position of publication: 4 **No. of journals in the cat.:** 29

Source of citations: WOS **Citations:** 4

Source of citations: INSPIRE-HEP **Citations:** 15

Relevant results: 48 pages, 23 figures, 3 tables
- 4** Rafael Delgado López; Antonio Dobado González; Miguel Espada; Felipe J. Llanes Estrada; Iván León Merino. Collider production of electroweak resonances from $\gamma\gamma$ states. JHEP. 1811 - 010, pp. 1 - 36. Science Edition - PHYSICS, PARTICLES & FIELDSSpringer, 20/10/2017. ISSN 1029-8479

DOI: 10.1007/JHEP11(2018)010 : 1631811

Type of production: Scientific paper **Format:** Journal

Impact source: ISI **Category:** Science Edition - PHYSICS, PARTICLES & FIELDS

Impact index in year of publication: 5.541 **Journal in the top 25%:** Yes

Position of publication: 4 **No. of journals in the cat.:** 29

Source of citations: INSPIRE-HEP **Citations:** 2

- 5** Rafael L. Delgado; Antonio Dobado; Felipe J. Llanes-Estrada. Coupling WW, ZZ unitarized amplitudes to $\gamma\gamma$ in the TeV region. EPJC. 77 - 4, pp. 205-1 - 205-13. PHYSICS, PARTICLES & FIELDS Springer, 2017. ISSN 1434-6044
DOI: 10.1140/epjc/s10052-017-4768-y
Type of production: Scientific paper
Impact source: ISI
Impact index in year of publication: 5.172
Position of publication: 5
Source of citations: WOS
Source of citations: INSPIRE-HEP
Relevant results: 13 pages, 9 figures
- Format:** Journal
Category: PHYSICS, PARTICLES & FIELDS
Journal in the top 25%: Yes
No. of journals in the cat.: 29
Citations: 4
Citations: 8
- 6** Andrés Castillo; Rafael L. Delgado; Antonio Dobado; Felipe J. Llanes-Estrada. Top-antitop production from WL+ WL- and ZL ZL scattering under a strongly-interacting symmetry-breaking sector. EPJC. 77, pp. 436-1 - 436-14. Science Edition - PHYSICS, PARTICLES & FIELDS Springer, 2016. ISSN 1434-6044
DOI: 10.1140/epjc/s10052-017-4991-6
Type of production: Scientific paper
Position of signature: 2
Total no. authors: 4
Impact source: ISI
Impact index in year of publication: 5172
Position of publication: 5
Source of citations: WOS
Source of citations: INSPIRE-HEP
Relevant results: 14 pages, 12 figures
- Format:** Journal
Category: Science Edition - PHYSICS, PARTICLES & FIELDS
Journal in the top 25%: Yes
No. of journals in the cat.: 29
Citations: 1
Citations: 10
- 7** Delgado, Rafael L.; Dobado, Antonio; Llanes-Estrada, Felipe J.. Possible New Resonance from WL WL - hh Interchannel Coupling. Phys. Rev. Lett. 114 - 22, pp. 221803-1 - 221803-5. Science Edition - PHYSICS, MULTIDISCIPLINARY AMERICAN PHYSICAL SOCIETY, 04/06/2015. ISSN 0031-9007
DOI: 10.1103/PhysRevLett.114.221803
Type of production: Scientific paper
Impact source: ISI
Impact index in year of publication: 7.645
Position of publication: 6
Source of citations: WOS
Source of citations: INSPIRE-HEP
Relevant results: 5 pages, 7 figures
- Format:** Journal
Category: Science Edition - PHYSICS, MULTIDISCIPLINARY
Journal in the top 25%: Yes
No. of journals in the cat.: 79
Citations: 17
Citations: 25
- 8** Delgado, Rafael L.; Dobado, Antonio; Llanes-Estrada, Felipe J.. Unitarity, analyticity, dispersion relations, and resonances in strongly interacting WL WL, ZL ZL, and hh scattering. Phys. Rev. D. 91 - 7, pp. 075017-1 - 075017-36. Science Edition - ASTRONOMY & ASTROPHYSICS Science Edition - PHYSICS, PARTICLES & FIELDS AMERICAN PHYSICAL SOCIETY, 27/04/2015. ISSN 2470-0010
DOI: 10.1103/PhysRevD.91.075017
Type of production: Scientific paper
Impact source: ISI
- Format:** Journal

**Impact index in year of publication:** 4.506**Position of publication:** 16**Impact source:** ISI**Impact index in year of publication:** 4.506**Position of publication:** 8**Source of citations:** WOS**Source of citations:** INSPIRE-HEP**Relevant results:** 36 pages, 28 figures**Category:** Science Edition - ASTRONOMY & ASTROPHYSICS**Journal in the top 25%:** No**No. of journals in the cat.:** 62**Category:** Science Edition - PHYSICS, PARTICLES & FIELDS**Journal in the top 25%:** No**No. of journals in the cat.:** 28**Citations:** 19**Citations:** 32

- 9** Delgado, R. L.; Dobado, A.; Herrero, M. J.; Sanz-Cillero, J. J.. One-loop $\gamma\gamma \rightarrow WL+WL-$ and $\gamma\gamma \rightarrow ZLZL$ from the Electroweak Chiral Lagrangian with a light Higgs-like scalar. JHEP. 149 - 7, pp. 1 - 41. Science Edition - PHYSICS, PARTICLES & FIELDS, 29/07/2014. ISSN 1029-8479

DOI: 10.1007/JHEP07(2014)149**Type of production:** Scientific paper**Impact source:** ISI**Impact index in year of publication:** 6.111**Position of publication:** 3**Source of citations:** WOS**Source of citations:** INSPIRE-HEP**Relevant results:** 41 pages, 5 figures**Format:** Journal**Category:** Science Edition - PHYSICS, PARTICLES & FIELDS**Journal in the top 25%:** Yes**No. of journals in the cat.:** 27**Citations:** 12**Citations:** 44

- 10** Delgado, Rafael L.; Dobado, Antonio; Llanes-Estrada, Felipe J.. One-loop $WLWL$ and $ZLZL$ scattering from the electroweak Chiral Lagrangian with a light Higgs-like scalar. JHEP. 121 - 2, pp. 1 - 31. Science Edition - PHYSICS, PARTICLES & FIELDS, 27/02/2014. ISSN 1029-8479

DOI: 10.1007/JHEP02(2014)121**Type of production:** Scientific paper**Impact source:** ISI**Impact index in year of publication:** 6.111**Position of publication:** 3**Source of citations:** WOS**Source of citations:** INSPIRE-HEP**Relevant results:** 31 pages, 19 plots, 9 Feynman-diagram sets**Format:** Journal**Category:** Science Edition - PHYSICS, PARTICLES & FIELDS**Journal in the top 25%:** Yes**No. of journals in the cat.:** 27**Citations:** 22**Citations:** 58

- 11** Delgado, Rafael L.; Dobado, Antonio; Llanes-Estrada, Felipe J.. Light 'Higgs', yet strong interactions. J.Phys. G. 41 - 025002, pp. 1 - 28. Science Edition - PHYSICS, PARTICLES & FIELDS, 01/02/2014. ISSN 0954-3899

DOI: 10.1088/0954-3899/41/2/025002**Type of production:** Scientific paper**Impact source:** ISI**Impact index in year of publication:** 2.777**Position of publication:** 11**Format:** Journal**Category:** Science Edition - PHYSICS, PARTICLES & FIELDS**Journal in the top 25%:** No**No. of journals in the cat.:** 27



Impact source: ISI
Impact index in year of publication: 2.777
Position of publication: 7

Source of citations: WOS

Source of citations: INSPIRE-HEP

Relevant results: 28 pages, 24 plots Appears on the 'Highlights of 2014' of the Journal, and on the portrait.

Category: Science Edition - PHYSICS, NUCLEAR
Journal in the top 25%: No
No. of journals in the cat.: 21

Citations: 28

Citations: 36

- 12** Delgado, R. L.; Hidalgo-Duque, Carlos; Llanes-Estrada, Felipe J.. To What Extent is Gluon Confinement an Empirical Fact?. Few Body Syst.54 - 11, pp. 1705 - 1717. Science Edition - PHYSICS, MULTIDISCIPLINARY Springer WIEN, 01/11/2013. ISSN 0177-7963

DOI: 10.1007/s00601-012-0500-5

Type of production: Scientific paper

Impact source: ISI

Impact index in year of publication: 1.508

Position of publication: 30

Source of citations: WOS

Source of citations: INSPIRE-HEP

Relevant results: 13 pages, 12 figures

Format: Journal

Category: Science Edition - PHYSICS, MULTIDISCIPLINARY

Journal in the top 25%: No

No. of journals in the cat.: 78

Citations: 2

Citations: 7

- 13** Cembranos, Jose A. R.; Delgado, Rafael L.; Dobado, Antonio. Brane worlds at the LHC: Branons and KK gravitons. Phys. Rev. D. 88 - 7, pp. 075021-1 - 075021-11. Science Edition - ASTRONOMY & ASTROPHYSICS Science Edition - PHYSICS, PARTICLES & FIELDS AMER PHYSICAL SOC, 29/10/2013. ISSN 1550-2368

DOI: 10.1103/PhysRevD.88.075021

Type of production: Scientific paper

Impact source: ISI

Impact index in year of publication: 4.864

Position of publication: 12

Impact source: ISI

Impact index in year of publication: 4.864

Position of publication: 6

Source of citations: WOS

Source of citations: INSPIRE-HEP

Relevant results: 11 pages, 3 figures

Format: Journal

Category: Science Edition - ASTRONOMY & ASTROPHYSICS

Journal in the top 25%: Yes

No. of journals in the cat.: 59

Category: Science Edition - PHYSICS, PARTICLES & FIELDS

Journal in the top 25%: Yes

No. of journals in the cat.: 27

Citations: 19

Citations: 24

- 14** Delgado, R. L.; Bargueno, P.; Sols, F.. Two-step condensation of the charged Bose gas. Phys. Rev. E. 86 - 3, pp. 031102-1 - 031102-5. Science Edition - PHYSICS, FLUIDS & PLASMA Science Edition - PHYSICS, MATHEMATICAL AMER PHYSICAL SOC, 04/09/2012. ISSN 1539-3755

DOI: 10.1103/PhysRevE.86.031102

Type of production: Scientific paper

Impact source: ISI

Impact index in year of publication: 2.313

Format: Journal

Category: Science Edition - PHYSICS, FLUIDS & PLASMAS

Journal in the top 25%: No

**Position of publication:** 10**Impact source:** ISI**Impact index in year of publication:** 2.313**Position of publication:** 6**Source of citations:** WOS**Source of citations:** NASA-ADS**Relevant results:** 5 pages, 3 figures**No. of journals in the cat.:** 31**Category:** Science Edition - PHYSICS, MATHEMATICAL**Journal in the top 25%:** Yes**No. of journals in the cat.:** 55**Citations:** 3**Citations:** 4

- 15** Handbook of LHC Higgs cross sections: 4. Deciphering the nature of the Higgs sector. Working Group 2 Nonlinear EFT. pp. 340 - 355. (Switzerland): CERN, 06/04/2017. Available on-line at: <<https://inspirehep.net/record/1494411>>. ISSN 2519-8068, ISBN 978-92-9083-442-7

DOI: 10.23731/CYRM-2017-002

: CERN-2017-002-M

Type of production: Book chapter**Format:** Book**Degree of contribution:** Author or co-author of chapter in book**Corresponding author:** No**Source of citations:** INSPIRE-HEP and arXiv**Citations:** 1.729

- 16** 1; Rafael Delgado Lopez. Study of the Electroweak Symmetry Breaking Sector for the LHC. Springer Theses. pp. 1 - 197. Springer International Publishing, 2017. ISSN 2190-5053, ISBN 978-3-319-60497-8

DOI: 10.1007/978-3-319-60498-5**Collection:** Springer Theses**Type of production:** Scientific book or monograph**Format:** Book**Position of signature:** 1**Total no. authors:** 1**Corresponding author:** Yes**Relevant results:** 197 pages. This publication is the core prize of the Springer Theses Award.

- 17** VBSCan Mid-Term Scientific Meeting. VBSCan-PUB-02-20. VBSCan COST Network, 03/04/2020.

Type of production: Scientific-technical report**Format:** Scientific and technical document or report**Relevant results:** Editor of this Report

- 18** Rafael Delgado López; Antonio Dobado; Domènec Espriu; Claudia García García; María José Herrero Solans; Xavier Marcano; Juan José Sanz Cillero. Collider phenomenology of vector resonances in WZ scattering processes. PoS. Confinement2018 - 220, 21/11/2018. ISSN 1824-8039

DOI: 10.22323/1.336.0220**arXiv:** 1811.08720 [hep-ph]: <http://inspirehep.net/record/1704513>**Type of production:** Proceedings**Format:** Journal**Corresponding author:** Yes**Relevant results:** Contributed to the 13th Conference on Quark Confinement and the Hadron Spectrum (Confinement XIII). 31 Jul - 06 Aug 2018. Maynooth, Ireland

- 19** Felipe L. Llanes Estrada; Rafael Delgado López; Antonio Dobado González. Electroweak resonances in HEFT. arXiv:1709.10491 [hep-ph]. 29/09/2017. Available on-line at: <<http://arxiv.org/abs/arXiv:1709.10491>>.

Type of production: Proceedings**Format:** Journal**Relevant results:** 4+1 pages, 7 plots. Contribution to the EPS conference on High Energy Physics, Venice, Italy, 5th-12th July 2017.

- 20** Rafael Delgado. Coupling of $t\bar{t}$ and $\gamma\gamma$ with a strongly interacting Electroweak Symmetry Breaking Sector. EPJ Web Conf. 137, pp. 10001-1 - 10001-9. Springer, 2017. ISSN 2100-014X
DOI: 10.1051/epjconf/201713710001
Type of production: Proceedings
Relevant results: 9 pages, 3 figures. Contributions to the Procs. of the XIIth Quark Confinement and the Hadron Spectrum, Thessaloniki, Greece, August 2016.
- 21** Rafael Delgado López; Antonio Dobado González; María José Herrero Solans; Juan José Sanz Cillero. Electroweak chiral Lagrangians and $\gamma\gamma \rightarrow ZL ZL, WL+ WL-$ at One Loop. Proceedings of the Second Annual LHCP. 273, pp. 703 - 709. Scientific Publishing Services at SLAC, 01/06/2016. Available on-line at: <<http://www.slac.stanford.edu/econf/C140602.2/papers/1409.3983v1.pdf>>.
Type of production: Proceedings
Source of citations: INSPIRE-HEP **Citations:** 1
Relevant results: 6 pages, 8 eps figures. Proceedings of the 37th International Conference on High Energy Physics (ICHEP 2014), Valencia (Spain), 2nd-9th July 2014.
- 22** Rafael L. Delgado; Antonio Dobado; Felipe J. Llanes-Estrada. A Strongly Interacting Electroweak Symmetry Breaking Sector with a Higgs-like light scalar. AIP Conf. Proc.1701, pp. 090003-1 - 090003-9. AIP, 2016. ISSN 0094-243X
DOI: 10.1063/1.4938705
Type of production: Proceedings **Format:** Journal
Source of citations: WOS **Citations:** 2
Source of citations: INSPIRE-HEP **Citations:** 4
Relevant results: 9 pages, 10 figures. Proceedings of the XIth Quark Confinement and the Hadron Spectrum, 8-12 September, 2014, Saint-Petersburg, Russia.
- 23** R. L. Delgado; A. Dobado; M. J. Herrero; J. J. Sanz-Cillero. Electroweak chiral Lagrangian with a light Higgs and $\gamma\gamma \rightarrow ZL ZL, WL+ WL-$ scattering at one loop. Nucl. Part. Phys. Proc.273-275, pp. 703 - 709. Elsevier, 2016. ISSN 2405-6014
DOI: 10.1016/j.nuclphysbps.2015.09.107
Type of production: Proceedings **Format:** Journal
Source of citations: WOS **Citations:** 2
Source of citations: INSPIRE-HEP **Citations:** 1
Relevant results: 7 pages, 8 eps figures. Proceedings of the 37th International Conference on High Energy Physics (ICHEP 2014), Valencia (Spain), 2nd-9th July 2014.
- 24** Rafael L. Delgado; Antonio Dobado; Felipe J. Llanes-Estrada. Strongly interacting $WL WL, ZL ZL$ and hh from unitarized one-loop computations. Nucl. Part. Phys. Proc.273-275, pp. 2436 - 2438. Elsevier, 2016. ISSN 2405-6014
DOI: 10.1016/j.nuclphysbps.2015.09.417
Type of production: Proceedings **Format:** Journal
Source of citations: WOS **Citations:** 2
Source of citations: INSPIRE-HEP **Citations:** 1
Relevant results: 3 pages, 3 figures, ICHEP2014 Proceedings.
- 25** Antonio Dobado González; Rafael Delgado López; Felipe José Llanes Estrada; Domenec Espriu. Comparing mesons and $WL WL$ TeV-resonances. Bled Workshops Phys.16 - 1, pp. 1 - 8. 14/10/2015. Available on-line at: <<http://www-f1.ijs.si/BledPub/bled2015.pdf>>. ISSN 1580-4992
Type of production: Proceedings



Corresponding author: No

Source of citations: INSPIRE-HEP

Citations: 2

Relevant results: 8 pages, 10 plots. Proceedings of the Bled miniworkshop "Exploring hadron resonances", July 5th-11th 2015.

- 26** Antonio Dobado González; Rafael Delgado López; Felipe José Llanes Estrada. Resonances in WL WL, ZL ZL and hh scattering from dispersive analysis of the non-linear Electroweak+Higgs Effective Theory. PoS EPS-HEP2015. 173, pp. 1 - 6. 15/09/2015. Available on-line at: <http://pos.sissa.it/archive/conferences/234/173/EPS-HEP2015_173.pdf>. ISSN 1824-8039

Type of production: Proceedings

Corresponding author: No

Source of citations: INSPIRE-HEP

Citations: 3

Relevant results: 6 pages, 12 plots. Presented at the 2015 European Physical Society Conference on High Energy Physics (EPS-HEP 2015), 22-29 Jul 2015, Vienna, Austria.

- 27** Felipe José Llanes Estrada; Antonio Dobado González; Rafael Delgado López. Describing 2-TeV scale WLWL resonances with Unitarized Effective Theory. Bled Workshops Phys.16 - 2, pp. 78 - 86. 2015. Available on-line at: <<http://bsm.fmf.uni-lj.si/bled2015bsm/talks/BledVol16No2procFinal.pdf>>. ISSN 1580-4992

Type of production: Proceedings

Format: Journal

Corresponding author: No

Source of citations: INSPIRE-HEP

Citations: 4

Relevant results: 9 pages, 12 graphs. Contribution to the proceedings of the XVIIIth workshop "What Comes Beyond the Standard Models?", Bled, Slovenia, July 11th-19th 2015.

- 28** Antonio Dobado; Rafael L. Delgado; Felipe J. Llanes-Estrada. Strongly Interacting Electroweak Symmetry Breaking Sector with a Higgs-like light scalar. AIP Conf. Proc.1606, pp. 151 - 158. 2014. ISSN 0094-243X
DOI: 10.1063/1.4891127

Type of production: Proceedings

Format: Journal

Source of citations: WOS

Citations: 2

Source of citations: INSPIRE-HEP

Citations: 3

Relevant results: 8 pages, 5 figures. Delivered at the II Russian-Spanish Congress "Particle and Nuclear Physics at all Scales and Cosmology" Institute of Cosmos Sciences, Saint-Petersburg, October 1-4, 2013.

- 29** Antonio Dobadfo; Felipe Llanes-Estrada J.; Alexandre Salas Bernardez; Rafael Delgado López. Resonances in unitarized HEFT at the LHC. EPS-HEP2019.

Works submitted to national or international conferences

- 1** **Title of the work:** Vector Resonances in VBS
Authors (by signature order): Rafael Delgado

End date: 24/10/2019, Yes,

En: Baryon and Lepton Number Violation. Madrid, pp. 21/10/2019. Community of Madrid (Spain): IFT CSIC/UAM,

- 2** **Title of the work:** EFT Validity and Unitarity for Tri/Multi-Boson Signatures

End date: 28/08/2019, Yes,

En: Multi-Boson Interactions 2019. Thessaloniki, pp. 26/08/2019. (Greece):



- 3** **Title of the work:** Unitary predictions for dynamical vector resonances emerging at VBS-LHC
End date: 19/07/2019,
En: XXXVII Reunión Bienal de la Real Sociedad Española de Física. Zaragoza, pp. 15/07/2019. Aragon (Spain): Universidad de Zaragoza, University.
- 4** **Title of the work:** Perspectives for Vector Boson Scattering in the FullyHadronic Channel
End date: 07/06/2019, Yes,
En: XLVII International Meeting on Fundamental Physics. Aranjuez, pp. 03/06/2019. Community of Madrid (Spain):
- 5** **Title of the work:** Unitary EChL predictions with MadGraph 5 for dynamical vector resonances emerging at VBS-LHC
End date: 18/04/2019, Yes,
En: Higgs and Effective Field Theory - HEFT 2019. Brussel, pp. 15/04/2019. (Belgium): Université catholique de Louvain, Vrije Universiteit Brussel, Center for Cosmology and Particle Physics Phenomenology (CP3),
- 6** **Title of the work:** Collider phenomenology of dynamical vector resonances emerging at VBS-LHC
End date: Yes
En: ICCUB Invited Seminar. Barcelona, pp. 09/04/2019. Catalonia (Spain): Universitat de Barcelona, University.
- 7** **Title of the work:** Hidden graviton phenomenology in C2PAP
Aut. region/ region organizing entity: Oberbayern
Authors (by signature order): Rafael Delgado López; José Alberto Ruiz Cembranos; Antonio López Maroto; Héctor Villarrubia
Legal deposit: Germany
End date: 06/12/2018, Yes,
Garching. En: Science Week 2018. Seeon, pp. 03/12/2018. Oberbayern (Germany): Excellence Universe Cluster, University Centres and Structures and Associated Bodies.
- 8** **Title of the work:** Collider phenomenology of vector resonances in WZ scattering processes
Authors (by signature order): Rafael Delgado López; Antonio Dobado; Domènec Espriu; Claudia García García; María José Herrero Solans; Xavier Marcano; Juan José Sanz Cillero
End date: 06/08/2018, Yes,
En: 13th Conference on Quark Confinement and the Hadron Spectrum (Confinement XIII). Maynooth, pp. 31/07/2018. (Ireland): Maynooth University, University.
- 9** **Title of the work:** EFT's: a road from perturbative EW to lattice QCD
End date: Yes
En: Seminar at the UCM. Madrid, pp. 27/04/2018. Community of Madrid (Spain): Universidad Complutense de Madrid (UCM),
- 10** **Title of the work:** Overview of VBS processes in the chiral Lagrangian
End date: 28/04/2018, Yes,
En: VBS EFT comparison studies (internal meeting). Milan, pp. 26/04/2018. Lombardia (Italy): COST Action CA16108,
- 11** **Title of the work:** EWSBS phenomenology in diphoton events
Aut. region/ region organizing entity: Rheinhessen-Pfalz
Legal deposit: Germany
End date: 19/04/2018, Yes,



Mainz. En: Higgs Effective Field Theory 2018 (HEFT 2018). Mainz, pp. 16/04/2018. Rheinhessen-Pfalz (Germany): Mainz Institute for Theoretical Physics (MITP), R&D Centre.

- 12 Title of the work:** Unitarized EFT for a strongly interacting BSM Electroweak Sector coupled with $t\bar{t}$
End date: 21/07/2017, Yes,
En: XXXVI Reunión Bienal de la Real Sociedad Española de Física. Gijón, pp. 17/07/2017. Principality of Asturias (Spain): REAL SOCIEDAD ESPAÑOLA DE FISICA,
- 13 Title of the work:** Unitarized EFT for a strongly interacting BSM Electroweak Sector (poster & talk)
End date: 07/07/2017, Yes,
En: JOINT FGZ-PH Summer School on Methods of Effective Field Theory & Lattice Field Theory. Garching, pp. 26/06/2017. (Germany): TUM - Technische Universität München,
- 14 Title of the work:** Unitarized EFT for a strongly interacting BSM Electroweak Sector
End date: 19/06/2017, Yes,
En: Invited Seminar at IFIC. Paterna, pp. 19/06/2017. Valencian Community (Spain): Instituto de Física Corpuscular, State agency.
- 15 Title of the work:** Coupling of $t\bar{t}$ with a strongly interacting EWSBS
Type of event: Conference
Authors (by signature order): Rafael Delgado López; Andrés Fernando Castillo Ramírez; Antonio Dobado González; Felipe José Llanes Estrada
Type of participation: 'Participatory - poster
End date: 05/09/2016, Yes,
En: XII Quark Confinement and the Hadron Spectrum. Thessaloniki, pp. 28/08/2016. Kentriki Makedonia (Greece):
- 16 Title of the work:** Strongly Interacting EWSBS resonances in the diphoton channel
Type of event: Conference
Authors (by signature order): Rafael Delgado López; Antonio Dobado González; Felipe José Llanes Estrada
Type of participation: Participatory - oral
End date: 05/09/2016, Yes,
En: XII Quark Confinement and the Hadron Spectrum. Thessaloniki, pp. 28/08/2016. Kentriki Makedonia (Greece):
- 17 Title of the work:** Effective Field Theories for studying a strongly interacting EWSBS at the TeV scale
Type of event: Seminar
Aut. region/ region organizing entity: Oberbayern
Authors (by signature order): Rafael Delgado López; Antonio Dobado González; Felipe José Llanes Estrada
Legal deposit: Germany
End date: Yes
Munich. En: Seminar at the MPI. Munich, pp. 11/12/2015. Oberbayern (Germany): Max-Planck-Institut für Physik, R&D Centre.
- 18 Title of the work:** Resonances at the TeV: Higgs-like boson, but a strongly interacting EWSBS
Type of event: Workshop
Authors (by signature order): Rafael Delgado López; Antonio Dobado González; Felipe José Llanes Estrada
Type of participation: Participatory - oral
End date: 03/12/2015, Yes,



En: VII CPAN Days. Segovia, pp. 01/12/2015. Castile and León (Spain): Centro Nacional de Física de Partículas, Astropartículas y Nuclear,

19 Title of the work: Non-linear Electroweak Chiral Lagrangians at the TeV scale

Type of event: Seminar

Aut. region/ region organizing entity: Oberbayern

Authors (by signature order): Rafael Delgado

Type of participation: Participatory - oral

López; Antonio Dobado González; Felipe José Llanes Estrada

Legal deposit: Germany

End date: Yes

Munich. En: Seminar at the LMU. Munich, pp. 21/10/2015. Oberbayern (Germany): Ludwig-Maximilians-Universität, University.

20 Title of the work: Unitarization and parameter space of the One-loop WLWL and ZLZL scattering from the Electroweak Chiral Lagrangian

Type of event: Conference

Authors (by signature order): Rafael Delgado

Type of participation: Participatory - oral

López; Antonio Dobado González; Felipe José Llanes Estrada

End date: 17/07/2015, Yes,

En: XXXV Reunión Bienal de la Real Sociedad Española de Física. Gijón, pp. 13/07/2015. Principality of Asturias (Spain): REAL SOCIEDAD ESPAÑOLA DE FISICA,

21 Title of the work: Unitarization Procedures applied to a Strongly Interacting EWSBS

Type of event: Summer Workshop

Authors (by signature order): Rafael Delgado

Type of participation: Participatory - oral communication

López; Antonio Dobado González; María José Herrero Solans; Felipe José Llanes Estrada; Juan José Sanz Cillero

Legal deposit: United States of America

End date: 19/06/2015, Yes,

Bloomington, IN. "Non EU International". En: 2015 International Summer Workshop on Reaction Theory. Bloomington, IN, pp. 08/06/2015. (United States of America): Indiana University, University.

22 Title of the work: How internet runs, a network of networks

Type of event: Seminar

Authors (by signature order): Rafael Delgado

Type of participation: Participatory - oral communication

López

End date: Yes

En: Seminarios "Transversal Seminars". Madrid, pp. 24/05/2015. Community of Madrid (Spain): Universidad Complutense de Madrid, University.

23 Title of the work: Supercomputing simulations for Beyond Standard Model theories at the TeV scale: non-standard gravity and electroweak interactions

Type of event: Workshop

Authors (by signature order): Rafael Delgado

Type of participation: Participatory - oral communication

López; José Alberto Ruiz Cembranos; Antonio Dobado González; Felipe José Llanes Estrada

End date: 07/05/2015, Yes,

En: 2nd BSC International Doctoral Symposium. Barcelona, pp. 05/05/2015. Catalonia (Spain): Centro Nacional de Supercomputación, R&D Centre.



- 24** **Title of the work:** Light Higgs-like scalar, but strong interactions. It is possible?
Type of event: Workshop
Authors (by signature order): Rafael Delgado López; Antonio Dobado González; María José Herrero Solans; Juan José Sanz Cillero
Type of participation: Participatory - oral communication
End date: 25/04/2015, Yes,
En: Jornadas de Doctorandos 2015. Madrid, pp. 23/04/2015. Community of Madrid (Spain): Universidad Complutense de Madrid, University.
- 25** **Title of the work:** A light Higgs in a Strongly Interacting Electroweak Symmetry Breaking Sector
Type of event: Seminar
Authors (by signature order): Rafael Delgado López; Antonio Dobado González; María José Herrero Solans; Juan José Sanz Cillero
Type of participation: Participatory - oral communication
End date: Yes
En: Seminarios "Transversal Seminars". Madrid, pp. 16/01/2015. Community of Madrid (Spain): Universidad Complutense de Madrid, University.
- 26** **Title of the work:** A light Higgs in a strongly interacting electroweak symmetry breaking sector
Type of event: Workshop
Aut. region/ region organizing entity: Surrey, East and West Sussex
Authors (by signature order): Rafael Delgado López; Antonio Dobado González; María José Herrero Solans; Felipe José Llanes Estrada; Juan José Sanz Cillero
Type of participation: Participatory - oral communication
Legal deposit: United Kingdom
End date: Yes
Falmer. En: NExT Meeting at Sussex. Sussex, pp. 19/11/2014. Surrey, East and West Sussex (United Kingdom): University of Sussex, University.
- 27** **Title of the work:** BSM, the case of a Strongly Interacting Electroweak Symmetry Breaking Sector
Type of event: Workshop
Authors (by signature order): Rafael Delgado López; Antonio Dobado González; Felipe José Llanes Estrada
Type of participation: Participatory - oral communication
End date: 22/10/2014,
En: VI CPAN Days. Sevilla, pp. 20/10/2014. Andalusia (Spain): EWSBS Centro Nacional de Física de Partículas, Astropartículas y Nuclear,
- 28** **Title of the work:** A light Higgs in a strongly interacting electroweak symmetry breaking sector
Type of event: Seminar
Aut. region/ region organizing entity: Hampshire and Isle of Wight
Authors (by signature order): Rafael Delgado López; Antonio Dobado González; María Jesús Herrero Solans; Felipe José Llanes Estrada; Juan José Sanz Cillero
Type of participation: Participatory - oral communication
Legal deposit: United Kingdom
End date: 16/10/2014, Yes,
Southampton. En: Seminar at the SHEP group. Southampton, pp. 16/10/2014. Hampshire and Isle of Wight (United Kingdom): University of Southampton, University.



- 29** **Title of the work:** BSM through a strongly interacting Electroweak Symmetry Breaking Sector
Type of event: Conference
Authors (by signature order): Rafael Delgado López; Antonio Dobado González; María José Herrero Solans; Felipe José Llanes Estrada; Juan José Sanz Cillero
Type of participation: 'Participatory - poster
Legal deposit: United Kingdom
End date: 14/10/2014, Yes,
En: UK HEP Forum 2014 ("Future Colliders"). Abingdon, Oxford, pp. 13/10/2014. Berkshire, Buckinghamshire and Oxfordshire (United Kingdom): Science and Technology Facilities Council, State agency.
- 30** **Title of the work:** One-loop computations from the Electroweak Chiral Lagrangian with a light Higgs
Type of event: Conference
Authors (by signature order): Rafael Delgado López; Antonio Dobado González; Felipe José Llanes Estrada
Type of participation: 'Participatory - poster
End date: 12/09/2014, Yes,
En: XIth Quark Confinement and the Hadron Spectrum. Saint-Petersburg, pp. 08/09/2014. (Russia):
- 31** **Title of the work:** Strongly Interacting Electroweak Symmetry Breaking Sector with a Higgs-like light scalar
Type of event: Conference
Authors (by signature order): Rafael Delgado López; Antonio Dobado González; María José Herrero Solans; Felipe José Llanes Estrada; Juan José Sanz Cillero
Type of participation: Participatory - oral communication
End date: 12/09/2014, Yes,
En: XIth Quark Confinement and the Hadron Spectrum. Saint-Petersburg, pp. 08/09/2014. (Russia):
- 32** **Title of the work:** One-loop computations from the Electroweak Chiral Lagrangian with a light Higgs
Type of event: Conference
Authors (by signature order): Rafael Delgado López; Antonio Dobado González; Felipe José Llanes Estrada
Type of participation: 'Participatory - poster
End date: 09/07/2014, Yes,
"Non EU International". En: 37th International Conference in High Energy Physics. Valencia, pp. 02/07/2014. Valencian Community (Spain):
- 33** **Title of the work:** Graviton and Branon search at the LHC
Type of event: Workshop
Authors (by signature order): Rafael Delgado López; José Alberto Ruiz Cembranos; Antonio Dobado González
Type of participation: Participatory - oral communication
End date: 27/11/2013, Yes,
En: V CPAN Days. Santiago de Compostela, pp. 25/11/2013. Galicia (Spain): Centro Nacional de Física de Partículas, Astropartículas y Nuclear,
- 34** **Title of the work:** Light Higgs, still strong interactions
Type of event: Workshop
Authors (by signature order): Rafael Delgado López; Antonio Dobado González; Felipe José Llanes Estrada
Type of participation: Participatory - oral communication
End date: 27/11/2013, Yes,



En: V CPAN Days. Santiago de Compostela, pp. 25/11/2013. Galicia (Spain): Centro Nacional de Física de Partículas, Astropartículas y Nuclear,

- 35 Title of the work:** Monte Carlo simulations for extra dimensional models at the LHC
Authors (by signature order): Rafael Delgado López; José Alberto Ruiz Cembranos; Antonio Dobado González
End date: 28/09/2013,
En: Taller de Altas Energías 2013. Benasque, pp. 15/09/2013. Aragon (Spain):
- 36 Title of the work:** Monte Carlo simulations for extra dimensional models at the LHC
Type of event: Conference
Authors (by signature order): Rafael Delgado López; José Alberto Ruiz Cembranos; Antonio Dobado González
Type of participation: Participatory - oral communication
End date: 19/07/2013, Yes,
En: XXXIV Reunión Bienal de la Real Sociedad Española de Física. Valencia, pp. 15/07/2013. Valencian Community (Spain): REAL SOCIEDAD ESPAÑOLA DE FISICA,
- 37 Title of the work:** Multistep condensation
Type of event: Conference
Authors (by signature order): Rafael Delgado López; Pedro Bargeño de Retes; Fernando Sols Lucia
Type of participation: Participatory - oral communication
End date: Yes
En: V Encuentro Gases cuánticos en Madrid. Madrid, pp. 14/01/2013. Community of Madrid (Spain): Centro de Física Miguel Antonio Catalán, State agency.
- 38 Title of the work:** Multistep condensation
Type of event: Workshop
Authors (by signature order): Rafael Delgado López; Pedro Bargeño de Retes; Fernando Sols Lucia
Type of participation: Participatory - oral communication
End date: Yes
En: V Jornadas de Jóvenes Investigadores en Física Atómica y Molecular. pp. 14/01/2013. Universidad Complutense de Madrid, University.

Other dissemination activities

- 1 Title of the work:** Astronomía y Astrofísica
Type of event: Conferences given
City of event: Sigüenza, , Spain
Date of event: 07/09/2019
Organising entity: Centro de Información Juvenil "La Salamandra", Ayto. Sigüenza
- 2 Title of the work:** Collaboration: planetarium software (Stellarium and Celestia), astronomical observation / Colaboración: software de planetario virtual (Stellarium y Celestia), observación astronómica
Name of the event: Jornada literaria en Sigüenza: 'Mitos y Estrellas' / Literary day in Sigüenza: 'Myths and Stars'
Type of event: Conferences given
Reasons for participation: Upon invitation
City of event: Sigüenza, Available on-line at: <<http://ciervoblanco.club/mitos-y-estrellas/>>, Spain



Date of event: 26/08/2017

Organising entity: Club de Lectura Ciervo Blanco **Type of entity:** Associations and Groups
Rafael Delgado López. Available on-line at: <<http://ciervoblanco.club/mitos-y-estrellas/>>.

3 Title of the work: Public Astronomical Observation in Sigüenza / Observación Astronómica en Sigüenza

Type of event: Public Astronomical Observation with Telescope / 46/5000 Observación Pública con Telescopio

City of event: Sigüenza, , Spain

Date of event: 21/08/2017

Organising entity: Excmo. Ayuntamiento de Sigüenza **Type of entity:** Ayuntamiento

4 Title of the work: Jornada de Astronomía / Astronomy Day

Type of event: Lecture + Public Observation / Conferencia impartida + Observación Pública

City of event: Atienza, Available on-line at:

<<http://sibilasdeatienza.blogspot.de/2013/12/cronica-del-2013.html>>, Spain

Date of event: 10/08/2013

Organising entity: Sibilas de Atienza **Type of entity:** Associations and Groups

Rafael Delgado López. Available on-line at:

<<http://sibilasdeatienza.blogspot.de/2013/12/cronica-del-2013.html>>.

R&D management and participation in scientific committees

Organization of R&D activities

Title of the activity: VBSCan Mid-Term Scientific Meeting

Type of activity: Scientific Meeting

End date: 04/07/2019

Convening entity: Piri Reis University

City convening entity: Istanbul, Turkey

Type of participation: Editor of the Report

Start-End date: 02/07/2019 - 04/07/2019

Duration: 2 days

R&D management

1 Name of the activity: Departamental Web Manager / Administrador de Páginas Webs

Type of management: Web Administrator

Performed tasks: Creation and maintenance of the local departamental webpage / Creación y mantenimiento de la página web departamental

Entity: INFN

Type of entity: Public Research Body

Entity: INFN

2 Name of the activity: Departamental Web manager / Administrador de web departamental

Type of management: Web Administrator

Performed tasks: Maintain the T30f research group webpage, including seminar, congresses and group members / Mantenimiento de la página web del grupo T30f en la TUM.

Entity: T30f group, TUM

Type of entity: University

Entity: T30f group, TUM



- 3 Name of the activity:** Departamental Web manager / Administrador de web departamental
Type of management: Web Administrator
Performed tasks: Maintain the webpage of the Effective Theories in Modern Physics Group at UCM / Administrador de la página web del Grupo de Teorías Efectivas en Física Moderna de la UCM
Entity: Universidad Complutense de Madrid **Type of entity:** University
Start date: 01/12/2012 **Duration:** 4 years
Entity: Universidad Complutense de Madrid

- 4 Name of the activity:** IT manager of a scientific-divulagation society / Administrador de Sistemas en sociedad de divulgación científica
Type of management: IT manager / Administrador de Sistemas
Performed tasks: Web Manager, disclosure and advertisement of scientific-divulagation events, server manager, network manager / Administrador de páginas webs, divulgación y publicidad de eventos de divulgación científica, administrador de servidores informáticos, administrador de redes
Entity: ASAAF **Type of entity:** University scientific-divulagation society / Sociedad universitaria de divulgación científica
Start date: 01/02/2012 **Duration:** 2 years - 7 months - 29 days
Entity: ASAAF

Other achievements

Stays in public or private R&D centres

- 1 Entity:** SLAC-National Accelerator Laboratory **Type of entity:** R&D Centre
City of entity: Menlo Park, California, United States of America
Goals of the stay: Guest
Start-End date: 01/11/2016 - 30/11/2016 **Duration:** 1 month
Provable tasks: Collaboration Prof. S.Brodsky
- 2 Entity:** Max Planck Society **Type of entity:** State agency
Faculty, institute or centre: Max Planck Institut für Physik in München
City of entity: Munich, Oberbayern, Germany
Goals of the stay: Guest
Start-End date: 15/09/2015 - 15/12/2015 **Duration:** 3 months
Provable tasks: Collaboration Prof. Thomas Hahn
- 3 Entity:** University of Southampton **Type of entity:** University
Faculty, institute or centre: Schools of Physics and Astronomy
City of entity: Southampton, Hampshire and Isle of Wight, United Kingdom
Goals of the stay: Guest
Start-End date: 26/06/2015 - 02/07/2015 **Duration:** 8 days
Provable tasks: Collaboration Prof. Stefano Moretti
- 4 Entity:** University of Southampton **Type of entity:** University
Faculty, institute or centre: School of Physics and Astronomy
City of entity: Southampton, Hampshire and Isle of Wight, United Kingdom
Goals of the stay: Guest
Start-End date: 15/09/2014 - 15/12/2014 **Duration:** 3 months
Provable tasks: Collaboration Prof. Stefano Moretti



Obtained grants and scholarships

- 1** **Name of the grant:** Ramon Areces Foundation Fellowship
Aims: Post-doctoral
Awarding entity: Fundación Ramón Areces **Type of entity:** Foundation
Conferral date: 29/06/2017 **Duration:** 2 years
End date: 30/09/2019
Entity where activity was carried out: TUM - Technische Universität München
- 2** **Name of the grant:** PhD Grant, Spanish FPI program / Beca FPI de Formación de Personal Investigador
Aims: Pre-doctoral
Awarding entity: Ministerio de Economía y Competitividad **Type of entity:** MINECO
Conferral date: 28/11/2012 **Duration:** 4 years
End date: 01/12/2016
Entity where activity was carried out: Universidad Complutense de Madrid
Faculty, institute or centre: Facultad de Ciencias Físicas
- 3** **Name of the grant:** 5 "Excellence Grants" funded by the Community of Madrid / Beca de Excelencia de la CAM: obtenida los 5 años de Licenciatura
City awarding entity: Madrid, Community of Madrid, Spain
Aims: Pre-doctoral
Awarding entity: Comunidad de Madrid **Type of entity:** Consejería de Educación
Amount of the grant: 22.500 €
Conferral date: 01/06/2007 **Duration:** 5 years
End date: 01/06/2012
Entity where activity was carried out: Universidad Complutense de Madrid
Faculty, institute or centre: Facultad de Ciencias Físicas
- 4** **Name of the grant:** Summer research grant / Beca JAE-Intro de Introducción a la Investigación
Aims: Pre-doctoral
Awarding entity: Consejo Superior de Investigaciones Científicas **Type of entity:** State agency
Conferral date: 22/03/2011 **Duration:** 2 months
End date: 30/09/2011
Entity where activity was carried out: Consejo Superior de Investigaciones Científicas
Faculty, institute or centre: Instituto de Física Teórica
- 5** **Name of the grant:** INFN post-doctoral fellowship
Aims: Post-doctoral
Awarding entity: Istituto Nazionale di Fisica Nucleare (INFN) **Type of entity:** Public Research Body
Conferral date: 08/02/2019 **Duration:** 9 months
- 6** **Name of the grant:** [RESIGNED / RENUNCIADA]: IAC Summer Research Grants 2011
Aims: Pre-doctoral
Awarding entity: Instituto de Astrofísica de Canarias **Type of entity:** Public Research Body
Conferral date: 01/03/2011 **Duration:** 2 months
Entity where activity was carried out: Instituto de Astrofísica de Canarias



Scientific societies and professional associations

Name of the society: Royal Spanish Society of Physics. Agreement with the APS and the EPS / Real Sociedad Española de Física. Convenio con la APS y la EPS.

City: Spain

Start date: 28/10/2011

Co-operation networks

1 Name of the network: Vector Boson Scattering Coordination and Action Network

Identification of the network: COST Action CA16108

Start date: 30/08/2017

2 Name of the network: LHC Higgs cross-section working group (LHCHXSWG)

Identification of the network: hep-ph, hep-ex, hep-th, meeting point between experimentalists and theorists at CERN

City of co-operation network: Ginebra, Switzerland

Participating entity/entities: CERN

Type of entity: R&D Centre

Start date: 08/07/2016

Prizes, mentions and distinctions

1 Description: Extraordinary PhD Award / Premio Extraordinario de Doctorado

Awarding entity: Universidad Complutense de Madrid **Type of entity:** University

City awarding entity: Madrid, Community of Madrid, Spain

Conferral date: 05/07/2017

2 Description: Springer Theses Award

Awarding entity: Springer-Verlag Ibérica, S.A. **Type of entity:** Business

Conferral date: 07/03/2017

3 Description: "2014 Highlights" and journal cover

Awarding entity: Journal of Physics G: Nuclear and Particle Physics **Type of entity:** Scientific journal

Conferral date: 04/03/2015

4 Description: Extraordinary Degree Award / Premio Extraordinario de Licenciatura

Awarding entity: Universidad Complutense de Madrid **Type of entity:** University

City awarding entity: Madrid, Community of Madrid, Spain

Conferral date: 06/06/2013

5 Description: Extraordinary Secondary Education Award / Premio Extraordinario de Bachillerato

Awarding entity: Junta de Comunidades de Castilla - La Mancha **Type of entity:** Consejería de Educación y Ciencia

Conferral date: 25/01/2008



Obtained accreditations/recognitions

- 1** **Description:** Habilitation for the position of Ternured Professor in Private University in Spain / Acreditación para Profesor de Universidad Privada
Accrediting entity: Agencia Nacional de Evaluación de la Calidad y Acreditación **Type of entity:** State agency
City accrediting entity: Spain
Date of recognition: 18/07/2018
- 2** **Description:** Habilitation for the position of Ternured Professor in Spain / Acreditación para Profesor Contratado Doctor
Accrediting entity: Agencia Nacional de Evaluación de la Calidad y Acreditación **Type of entity:** State agency
City accrediting entity: Spain
Date of recognition: 18/07/2018
- 3** **Description:** Habilitation for the position of Assistant Professor in Spain / Acreditación para Profesor Ayudante Doctor
Accrediting entity: Agencia Nacional de Evaluación de la Calidad y Acreditación **Type of entity:** State agency
City accrediting entity: Spain
Date of recognition: 14/12/2016