

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 01/09/2020, I am assistant professor in the Applied Mathematics for ICT Depart. at ETSIST (Technical University of Madrid).

On 01/10/2019, I started a INFN fellowship in the Florence Particle Physics and Cosmology Group at INFN-Firenze. On 01/10/2017, I started my first post-doc in 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 LHCHSWG 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: Universidad Politécnica de Madrid **Type of entity:** University

Department: ETSIST

Professional category: Profesor Ayudante Doctor (Assistant Professor)

Start date: 01/09/2020

Type of contract: PAD

Dedication regime: Full time

Previous positions and activities

	Employing entity	Professional category	Start date
1	INFN Firenze	Post-doctoral fellow	01/10/2019
2	Fundación Ramón Areces	Post-doctoral Fellowship	01/10/2017
3	Universidad Complutense de Madrid	Contracted by Project FIS2013-41716-P	01/07/2017
4	Universidad Complutense de Madrid	Graduate student: Contract under the FPI program / Contratado con cargo a Programa FPI	01/12/2014
5	Ministerio de Economía y Competitividad	FPI grant / becario FPI	01/12/2012
6	Consejo Superior de Investigaciones Científicas	Summer research grant / Beca JAE-Intro de Introducción a la Investigación	27/06/2011

1 **Employing entity:** INFN Firenze **Type of entity:** Public Research Body
Professional category: Post-doctoral fellow
Start-End date: 01/10/2019 - 31/08/2020 **Duration:** 11 months
Type of contract: Temporary employment contract

2 **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; Teorías gauge en el retículo y cálculos [eng]; collider Signals; Extensions of standard model; Electroweak interaction; Perturbative QCD; Quantum field theory; Nuclear theory

3 **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.

4 **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

5 **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

6 **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

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

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



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 Infrastructure
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 LHCHXSWG 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:** Official teaching
Name of the course: Linear Algebra / Álgebra Lineal
Type of programme: Bachelor's degree
University degree: Graduado o Graduada en Ingeniería de Sistemas de Telecomunicaciones
Start date: 01/10/2021 **End date:** 31/01/2022
Type of hours/ ECTS credits: Hours
Hours/ECTS credits: 120
Entity: Universidad Politécnica de Madrid **Type of entity:** University
Faculty, institute or centre: ETSIST
- 2** **Type of teaching:** Official teaching
Name of the course: Discrete Mathematics / Matemática Discreta
Type of programme: Bachelor's degree
University degree: Graduado o Graduada en Ingeniería de Sistemas de Telecomunicaciones
Start date: 01/02/2022 **End date:** 30/06/2021
Type of hours/ ECTS credits: Hours
Hours/ECTS credits: 30
Entity: Universidad Politécnica de Madrid **Type of entity:** University
Faculty, institute or centre: ETSIST
- 3** **Type of teaching:** Official teaching
Name of the course: Linear Algebra / Álgebra Lineal
Type of programme: Bachelor's degree
University degree: Graduado o Graduada en Ingeniería de Sistemas de Telecomunicaciones
Start date: 01/10/2020 **End date:** 31/01/2021
Type of hours/ ECTS credits: Hours
Hours/ECTS credits: 108
Entity: Universidad Politécnica de Madrid **Type of entity:** University



Faculty, institute or centre: ETSIST

- 4** **Type of teaching:** Unofficial teaching
Name of the course: Métodos Estadísticos y Teóricos para el LHC
Type of programme: Doctorate **Type of teaching:** Practical work (classroom-problems)
Type of subject: Doctorate
University degree: Theoretical Physics, Post-Graduate tutorial
Start date: 11/11/2019 **End date:** 20/11/2019
Type of hours/ ECTS credits: Hours
Hours/ECTS credits: 8
Entity: Universidad Complutense de Madrid **Type of entity:** University
Faculty, institute or centre: Facultad de Ciencias Físicas
Department: Departamento de Física Teórica
- 5** **Type of teaching:** Unofficial teaching
Name of the course: Métodos Estadísticos y Teóricos para el LHC
Type of programme: Engineering **Type of teaching:** Practical work (classroom-problems)
Type of subject: Doctorate
University degree: Curso de Doctorado (docencia no reglada)
Start date: 11/11/2019 **End date:** 14/11/2019
Type of hours/ ECTS credits: Hours
Hours/ECTS credits: 8
Entity: Universidad Complutense de Madrid **Type of entity:** University
Faculty, institute or centre: Facultad de Ciencias Físicas
- 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
Start date: 01/02/2016 **End date:** 01/06/2016
Type of hours/ ECTS credits: Hours
Hours/ECTS credits: 5
Entity: Universidad Complutense de Madrid **Type of entity:** University
Faculty, institute or centre: Facultad de Ciencias Físicas
Department: Física Teórica I
- 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
Start date: 01/02/2016 **End date:** 01/06/2016
Type of hours/ ECTS credits: Hours
Hours/ECTS credits: 15
Entity: Universidad Complutense de Madrid **Type of entity:** University
Faculty, institute or centre: Facultad de Ciencias Biológicas
Department: Física Teórica I



- 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
Start date: 01/02/2015 **End date:** 01/06/2015
Type of hours/ ECTS credits: Hours
Hours/ECTS credits: 10
Entity: Universidad Complutense de Madrid **Type of entity:** University
Faculty, institute or centre: Facultad de Ciencias Físicas
Department: Física Teórica I
- 9** **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
Start date: 01/02/2014 **End date:** 01/06/2014
Type of hours/ ECTS credits: Hours
Hours/ECTS credits: 15
Entity: Universidad Complutense de Madrid **Type of entity:** University
Faculty, institute or centre: Facultad de Ciencias Físicas
Department: Física Teórica I
- 10** **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
Start date: 01/02/2014 **End date:** 01/06/2014
Type of hours/ ECTS credits: Hours
Hours/ECTS credits: 9
Entity: Universidad Complutense de Madrid **Type of entity:** University
Faculty, institute or centre: Facultad de Ciencias Biológicas
Department: Física Teórica I
- 11** **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
Start date: 01/02/2014 **End date:** 01/06/2014
Type of hours/ ECTS credits: Hours
Hours/ECTS credits: 10
Entity: Universidad Complutense de Madrid **Type of entity:** University
Faculty, institute or centre: Facultad de Ciencias Físicas
Department: Física Teórica I
- 12** **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

Start date: 01/10/2013

End date: 01/02/2014

Type of hours/ ECTS credits: Hours

Hours/ECTS credits: 5

Entity: Universidad Complutense de Madrid

Type of entity: University

Faculty, institute or centre: Facultad de Ciencias Físicas

Department: Física Teórica I

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:** University
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:** University
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:** University**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**Type of entity:** University**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. Springer, 16/11/2017. ISSN 1029-8479
DOI: 10.1007/JHEP11(2017)098
Type of production: Scientific paper **Format:** Journal
Position of signature: 1

**Total no. authors:** 7**Impact source:** ISI**Impact index in year of publication:** 5.541**Position of publication:** 4**Source of citations:** WOS**Source of citations:** INSPIRE-HEP**Relevant results:** 48 pages, 23 figures, 3 tables**Degree of contribution:** Author or co-author of article in journal with external admissions assessment committee**Category:** Science Edition - PHYSICS, PARTICLES & FIELDS**Journal in the top 25%:** Yes**No. of journals in the cat.:** 29**Citations:** 4**Citations:** 15

- 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. Springer, 20/10/2017. ISSN 1029-8479

DOI: 10.1007/JHEP11(2018)010

: 1631811

Type of production: Scientific paper**Impact source:** ISI**Impact index in year of publication:** 5.541**Position of publication:** 4**Source of citations:** INSPIRE-HEP**Format:** Journal**Category:** Science Edition - PHYSICS, PARTICLES & FIELDS**Journal in the top 25%:** Yes**No. of journals in the cat.:** 29**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. 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. 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**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



Relevant results: 14 pages, 12 figures

- 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. AMER PHYSICAL SOC, 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. AMER PHYSICAL SOC, 27/04/2015. ISSN 2470-0010

DOI: 10.1103/PhysRevD.91.075017

Type of production: Scientific paper

Impact source: ISI

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

Format: Journal

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 $\gamma\gamma \rightarrow ZL ZL$ from the Electroweak Chiral Lagrangian with a light Higgs-like scalar. JHEP. 149 - 7, pp. 1 - 41. Springer, 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 WL WL and ZL ZL scattering from the electroweak Chiral Lagrangian with a light Higgs-like scalar. JHEP. 121 - 2, pp. 1 - 31. Springer, 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. IOP Publishing LTD, 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
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.
Format: Journal
Category: Science Edition - PHYSICS, PARTICLES & FIELDS
Journal in the top 25%: No
No. of journals in the cat.: 27
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. 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. AMER PHYSICAL SOC, 29/10/2013. ISSN 1550-2368
DOI: 10.1103/PhysRevD.88.075021
Type of production: Scientific paper
Impact source: ISI
Format: Journal
Category: Science Edition - ASTRONOMY & ASTROPHYSICS



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

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. 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
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

Format: Journal

Category: Science Edition - PHYSICS, FLUIDS & PLASMAS

Journal in the top 25%: No
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. Geneva(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

Source of citations: WOS

Format: Journal

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

Source of citations: WOS

Format: Journal

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

Corresponding author: No

Source of citations: INSPIRE-HEP

Format: Journal

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

Source of citations: WOS

Format: Journal

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
Name of the conference: Baryon and Lepton Number Violation
Corresponding author: Yes
City of event: Madrid, Community of Madrid, Spain
Date of event: 21/10/2019
End date: 24/10/2019
Organising entity: IFT CSIC/UAM
Rafael Delgado.
- 2** **Title of the work:** EFT Validity and Unitarity for Tri/Multi-Boson Signatures
Name of the conference: Multi-Boson Interactions 2019
Corresponding author: Yes
City of event: Thessaloniki, Greece
Date of event: 26/08/2019
End date: 28/08/2019
- 3** **Title of the work:** Unitary predictions for dynamical vector resonances emerging at VBS-LHC
Name of the conference: XXXVII Reunión Bienal de la Real Sociedad Española de Física
City of event: Zaragoza, Aragon, Spain
Date of event: 15/07/2019
End date: 19/07/2019
Organising entity: Universidad de Zaragoza **Type of entity:** University
- 4** **Title of the work:** Perspectives for Vector Boson Scattering in the FullyHadronic Channel
Name of the conference: XLVII International Meeting on Fundamental Physics
Corresponding author: Yes
City of event: Aranjuez, Community of Madrid, Spain
Date of event: 03/06/2019
End date: 07/06/2019
- 5** **Title of the work:** Unitary EChL predictions with MadGraph 5 for dynamical vector resonances emerging at VBS-LHC
Name of the conference: Higgs and Effective Field Theory - HEFT 2019
Corresponding author: Yes
City of event: Brussel, Belgium
Date of event: 15/04/2019
End date: 18/04/2019
Organising entity: 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
Name of the conference: ICCUB Invited Seminar
Corresponding author: Yes
City of event: Barcelona, Catalonia, Spain
Date of event: 09/04/2019
Organising entity: Universitat de Barcelona **Type of entity:** University
- 7** **Title of the work:** Hidden graviton phenomenology in C2PAP
Name of the conference: Science Week 2018
Corresponding author: Yes
City of event: Seon, Oberbayern, Germany
Date of event: 03/12/2018
End date: 06/12/2018
Organising entity: Excellence Universe Cluster **Type of entity:** University Centres and Structures and Associated Bodies
City organizing entity: Garching, Oberbayern, Germany
Rafael Delgado López; José Alberto Ruiz Cembranos; Antonio López Maroto; Héctor Villarrubia.
- 8** **Title of the work:** Collider phenomenology of vector resonances in WZ scattering processes
Name of the conference: 13th Conference on Quark Confinement and the Hadron Spectrum (Confinement XIII)
Corresponding author: Yes
City of event: Maynooth, Ireland
Date of event: 31/07/2018
End date: 06/08/2018
Organising entity: Maynooth University **Type of entity:** University
Rafael Delgado López; Antonio Dobado; Domènec Espriu; Claudia García García; María José Herrero Solans; Xavier Marcano; Juan José Sanz Cillero.
- 9** **Title of the work:** EFT's: a road from perturbative EW to lattice QCD
Name of the conference: Seminar at the UCM
Corresponding author: Yes
City of event: Madrid, Community of Madrid, Spain
Date of event: 27/04/2018
Organising entity: Universidad Complutense de Madrid (UCM)
- 10** **Title of the work:** Overview of VBS processes in the chiral Lagrangian
Name of the conference: VBS EFT comparison studies (internal meeting)
Corresponding author: Yes
City of event: Milan, Lombardia, Italy
Date of event: 26/04/2018
End date: 28/04/2018
Organising entity: COST Action CA16108
- 11** **Title of the work:** EWSBS phenomenology in diphoton events
Name of the conference: Higgs Effective Field Theory 2018 (HEFT 2018)
Corresponding author: Yes
City of event: Mainz, Rheinhessen-Pfalz, Germany
Date of event: 16/04/2018
End date: 19/04/2018
Type of entity: R&D Centre



Organising entity: Mainz Institute for Theoretical Physics (MITP)

City organizing entity: Mainz, Rheinhessen-Pfalz, Germany

- 12** **Title of the work:** Unitarized EFT for a strongly interacting BSM Electroweak Sector coupled with $t\bar{t}$
Name of the conference: XXXVI Reunión Bienal de la Real Sociedad Española de Física
Corresponding author: Yes
City of event: Gijón, Principality of Asturias, Spain
Date of event: 17/07/2017
End date: 21/07/2017
Organising entity: REAL SOCIEDAD ESPAÑOLA DE FISICA
- 13** **Title of the work:** Unitarized EFT for a strongly interacting BSM Electroweak Sector (poster & talk)
Name of the conference: JOINT FGZ-PH Summer School on Methods of Effective Field Theory & Lattice Field Theory
Corresponding author: Yes
City of event: Garching, Germany
Date of event: 26/06/2017
End date: 07/07/2017
Organising entity: TUM - Technische Universität München
- 14** **Title of the work:** Unitarized EFT for a strongly interacting BSM Electroweak Sector
Name of the conference: Invited Seminar at IFIC
Corresponding author: Yes
City of event: Paterna, Valencian Community, Spain
Date of event: 19/06/2017
End date: 19/06/2017
Organising entity: Instituto de Física Corpuscular **Type of entity:** State agency
- 15** **Title of the work:** Coupling of $t\bar{t}$ with a strongly interacting EWSBS
Name of the conference: XII Quark Confinement and the Hadron Spectrum
Type of event: Conference
Type of participation: 'Participatory - poster
Corresponding author: Yes
City of event: Thessaloniki, Kentriki Makedonia, Greece
Date of event: 28/08/2016
End date: 05/09/2016
Rafael Delgado López; Andrés Fernando Castillo Ramírez; Antonio Dobado González; Felipe José Llanes Estrada.
- 16** **Title of the work:** Strongly Interacting EWSBS resonances in the diphoton channel
Name of the conference: XII Quark Confinement and the Hadron Spectrum
Type of event: Conference
Type of participation: Participatory - oral communication
Corresponding author: Yes
City of event: Thessaloniki, Kentriki Makedonia, Greece
Date of event: 28/08/2016
End date: 05/09/2016
Rafael Delgado López; Antonio Dobado González; Felipe José Llanes Estrada.



- 17** **Title of the work:** Effective Field Theories for studying a strongly interacting EWSBS at the TeV scale
Name of the conference: Seminar at the MPI
Type of event: Seminar
Corresponding author: Yes
City of event: Munich, Oberbayern, Germany
Date of event: 11/12/2015
Organising entity: Max-Planck-Institut für Physik **Type of entity:** R&D Centre
City organizing entity: Munich, Oberbayern, Germany
Rafael Delgado López; Antonio Dobado González; Felipe José Llanes Estrada.
- 18** **Title of the work:** Resonances at the TeV: Higgs-like boson, but a strongly interacting EWSBS
Name of the conference: VII CPAN Days
Type of event: Workshop
Type of participation: Participatory - oral communication
Corresponding author: Yes
City of event: Segovia, Castile and León, Spain
Date of event: 01/12/2015
End date: 03/12/2015
Organising entity: Centro Nacional de Física de Partículas, Astropartículas y Nuclear
Rafael Delgado López; Antonio Dobado González; Felipe José Llanes Estrada.
- 19** **Title of the work:** Non-linear Electroweak Chiral Lagrangians at the TeV scale
Name of the conference: Seminar at the LMU
Type of event: Seminar
Type of participation: Participatory - oral communication
Corresponding author: Yes
City of event: Munich, Oberbayern, Germany
Date of event: 21/10/2015
Organising entity: Ludwig-Maximilians-Universität **Type of entity:** University
City organizing entity: Munich, Oberbayern, Germany
Rafael Delgado López; Antonio Dobado González; Felipe José Llanes Estrada.
- 20** **Title of the work:** Unitarization and parameter space of the One-loop WLWL and ZLZL scattering from the Electroweak Chiral Lagrangian
Name of the conference: XXXV Reunión Bienal de la Real Sociedad Española de Física
Type of event: Conference
Type of participation: Participatory - oral communication
Corresponding author: Yes
City of event: Gijón, Principality of Asturias, Spain
Date of event: 13/07/2015
End date: 17/07/2015
Organising entity: REAL SOCIEDAD ESPAÑOLA DE FISICA
Rafael Delgado López; Antonio Dobado González; Felipe José Llanes Estrada.
- 21** **Title of the work:** Unitarization Procedures applied to a Strongly Interacting EWSBS
Name of the conference: 2015 International Summer Workshop on Reaction Theory
Type of event: Summer Workshop **Geographical area:** Non EU International
Type of participation: Participatory - oral communication
Corresponding author: Yes
City of event: Bloomington, IN, United States of America
Date of event: 08/06/2015



End date: 19/06/2015

Organising entity: Indiana University

Type of entity: University

City organizing entity: Bloomington, IN, United States of America

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

22 Title of the work: How internet runs, a network of networks
Name of the conference: Seminarios "Transversal Seminars"

Type of event: Seminar

Type of participation: Participatory - oral communication

Corresponding author: Yes

City of event: Madrid, Community of Madrid, Spain

Date of event: 24/05/2015

Organising entity: Universidad Complutense de Madrid

Type of entity: University

Rafael Delgado López.

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

Name of the conference: 2nd BSC International Doctoral Symposium

Type of event: Workshop

Type of participation: Participatory - oral communication

Corresponding author: Yes

City of event: Barcelona, Catalonia, Spain

Date of event: 05/05/2015

End date: 07/05/2015

Organising entity: Centro Nacional de Supercomputación

Type of entity: R&D Centre

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

24 Title of the work: Light Higgs-like scalar, but strong interactions. It is possible?

Name of the conference: Jornadas de Doctorandos 2015

Type of event: Workshop

Type of participation: Participatory - oral communication

Corresponding author: Yes

City of event: Madrid, Community of Madrid, Spain

Date of event: 23/04/2015

End date: 25/04/2015

Organising entity: Universidad Complutense de Madrid

Type of entity: University

Rafael Delgado López; Antonio Dobado González; María José Herrero Solans; Juan José Sanz Cillero.

25 Title of the work: A light Higgs in a Strongly Interacting Electroweak Symmetry Breaking Sector

Name of the conference: Seminarios "Transversal Seminars"

Type of event: Seminar

Type of participation: Participatory - oral communication

Corresponding author: Yes

City of event: Madrid, Community of Madrid, Spain

Date of event: 16/01/2015

Organising entity: Universidad Complutense de Madrid

Type of entity: University



Rafael Delgado López; Antonio Dobado González; María José Herrero Solans; Juan José Sanz Cillero.

- 26** **Title of the work:** A light Higgs in a strongly interacting electroweak symmetry breaking sector
Name of the conference: NExT Meeting at Sussex
Type of event: Workshop
Type of participation: Participatory - oral communication
Corresponding author: Yes
City of event: Sussex, Surrey, East and West Sussex, United Kingdom
Date of event: 19/11/2014
Organising entity: University of Sussex **Type of entity:** University
City organizing entity: Falmer, Surrey, East and West Sussex, United Kingdom
Rafael Delgado López; Antonio Dobado González; María José Herrero Solans; Felipe José Llanes Estrada;
Juan José Sanz Cillero.
- 27** **Title of the work:** BSM, the case of a Strongly Interacting Electroweak Symmetry Breaking Sector
Name of the conference: VI CPAN Days
Type of event: Workshop
Type of participation: Participatory - oral communication
City of event: Sevilla, Andalusia, Spain
Date of event: 20/10/2014
End date: 22/10/2014
Organising entity: EWSBS Centro Nacional de Física de Partículas, Astropartículas y Nuclear
Rafael Delgado López; Antonio Dobado González; Felipe José Llanes Estrada.
- 28** **Title of the work:** A light Higgs in a strongly interacting electroweak symmetry breaking sector
Name of the conference: Seminar at the SHEP group
Type of event: Seminar
Type of participation: Participatory - oral communication
Corresponding author: Yes
City of event: Southampton, Hampshire and Isle of Wight, United Kingdom
Date of event: 16/10/2014
End date: 16/10/2014
Organising entity: University of Southampton **Type of entity:** University
City organizing entity: Southampton, Hampshire and Isle of Wight, United Kingdom
Rafael Delgado López; Antonio Dobado González; María Jesús Herrero Solans; Felipe José Llanes Estrada;
Juan José Sanz Cillero.
- 29** **Title of the work:** BSM through a strongly interacting Electroweak Symmetry Breaking Sector
Name of the conference: UK HEP Forum 2014 ("Future Colliders")
Type of event: Conference
Type of participation: Participatory - poster
Corresponding author: Yes
City of event: Abingdon, Oxford, Berkshire, Buckinghamshire and Oxfordshire, United Kingdom
Date of event: 13/10/2014
End date: 14/10/2014
Organising entity: Science and Technology Facilities Council **Type of entity:** State agency
City organizing entity: United Kingdom
Rafael Delgado López; Antonio Dobado González; María José Herrero Solans; Felipe José Llanes Estrada;
Juan José Sanz Cillero.



- 30** **Title of the work:** One-loop computations from the Electroweak Chiral Lagrangian with a light Higgs
Name of the conference: XIth Quark Confinement and the Hadron Spectrum
Type of event: Conference
Type of participation: 'Participatory - poster
Corresponding author: Yes
City of event: Saint-Petersburg, Russia
Date of event: 08/09/2014
End date: 12/09/2014
Rafael Delgado López; Antonio Dobado González; Felipe José Llanes Estrada.
- 31** **Title of the work:** Strongly Interacting Electroweak Symmetry Breaking Sector with a Higgs-like light scalar
Name of the conference: XIth Quark Confinement and the Hadron Spectrum
Type of event: Conference
Type of participation: Participatory - oral communication
Corresponding author: Yes
City of event: Saint-Petersburg, Russia
Date of event: 08/09/2014
End date: 12/09/2014
Rafael Delgado López; Antonio Dobado González; María José Herrero Solans; Felipe José Llanes Estrada; Juan José Sanz Cillero.
- 32** **Title of the work:** One-loop computations from the Electroweak Chiral Lagrangian with a light Higgs
Name of the conference: 37th International Conference in High Energy Physics
Type of event: Conference **Geographical area:** Non EU International
Type of participation: 'Participatory - poster
Corresponding author: Yes
City of event: Valencia, Valencian Community, Spain
Date of event: 02/07/2014
End date: 09/07/2014
Rafael Delgado López; Antonio Dobado González; Felipe José Llanes Estrada.
- 33** **Title of the work:** Graviton and Branon search at the LHC
Name of the conference: V CPAN Days
Type of event: Workshop
Type of participation: Participatory - oral communication
Corresponding author: Yes
City of event: Santiago de Compostela, Galicia, Spain
Date of event: 25/11/2013
End date: 27/11/2013
Organising entity: Centro Nacional de Física de Partículas, Astropartículas y Nuclear
Rafael Delgado López; José Alberto Ruiz Cembranos; Antonio Dobado González.
- 34** **Title of the work:** Light Higgs, still strong interactions
Name of the conference: V CPAN Days
Type of event: Workshop
Type of participation: Participatory - oral communication
Corresponding author: Yes
City of event: Santiago de Compostela, Galicia, Spain
Date of event: 25/11/2013
End date: 27/11/2013
Organising entity: Centro Nacional de Física de Partículas, Astropartículas y Nuclear



Rafael Delgado López; Antonio Dobado González; Felipe José Llanes Estrada.

35 Title of the work: Monte Carlo simulations for extra dimensional models at the LHC

Name of the conference: Taller de Altas Energías 2013

City of event: Benasque, Aragon, Spain

Date of event: 15/09/2013

End date: 28/09/2013

Rafael Delgado López; José Alberto Ruiz Cembranos; Antonio Dobado González.

36 Title of the work: Monte Carlo simulations for extra dimensional models at the LHC

Name of the conference: XXXIV Reunión Bienal de la Real Sociedad Española de Física

Type of event: Conference

Type of participation: Participatory - oral communication

Corresponding author: Yes

City of event: Valencia, Valencian Community, Spain

Date of event: 15/07/2013

End date: 19/07/2013

Organising entity: REAL SOCIEDAD ESPAÑOLA DE FISICA

Rafael Delgado López; José Alberto Ruiz Cembranos; Antonio Dobado González.

37 Title of the work: Multistep condensation

Name of the conference: V Encuentro Gases cuánticos en Madrid

Type of event: Conference

Type of participation: Participatory - oral communication

Corresponding author: Yes

City of event: Madrid, Community of Madrid, Spain

Date of event: 14/01/2013

Organising entity: Centro de Física Miguel Antonio **Type of entity:** State agency
Catalán

Rafael Delgado López; Pedro Bargeño de Retes; Fernando Sols Lucia.

38 Title of the work: Multistep condensation

Name of the conference: V Jornadas de Jóvenes Investigadores en Física Atómica y Molecular

Type of event: Workshop

Type of participation: Participatory - oral communication

Corresponding author: Yes

Date of event: 14/01/2013

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

Rafael Delgado López; Pedro Bargeño de Retes; Fernando Sols Lucia.

Other dissemination activities

1 Title of the work: Astronomía y Astrofísica

Type of event: Conferences given

City of event: Sigüenza, Castile-La Mancha, 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, Castile-La Mancha, 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, Castile-La Mancha, 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, Castile-La Mancha, 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
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
Start date: 01/10/2019



- 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
Start date: 01/10/2017
- 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
- 4** **Name of the activity:** IT manager of a scientific-divulgence 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-divulgence 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-divulgence society / Sociedad universitaria de divulgación científica
Start date: 01/02/2012 **Duration:** 2 years - 7 months - 29 days

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
Start-End date: 01/11/2016 - 30/11/2016 **Duration:** 1 month
Goals of the stay: Guest
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
Start-End date: 15/09/2015 - 15/12/2015 **Duration:** 3 months
Goals of the stay: Guest
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
Start-End date: 26/06/2015 - 02/07/2015 **Duration:** 8 days
Goals of the stay: Guest
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
Start-End date: 15/09/2014 - 15/12/2014 **Duration:** 3 months
Goals of the stay: Guest
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