



Jose María Muñoz Castañeda

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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.

Qualified for "Profesor Ayudante Doctor", "Profesor Contratado Doctor", and "Profesor de Universidad Privada" by the ANECA since 2014.

Qualified for "Profesor Titular de Universidad" by the ANECA since 2020

Fields of interest: Mathematical Physics of quantum field theory, specially Casimir effect, quantum fields in the presence of boundaries, heat kernel/spectral zeta functions, and quantum fluctuations interacting with classical backgrounds.

I was awarded a FPU fellowship to do my PhD under supervision of M. Asorey in Zaragoza University (2009). Afterwards, with the support of Michael Bordag I obtained a short-visit grant from the ERC CASIMIR-Network to work at Leipzig University for three months(2010). As a result M. Bordag and I were awarded with a DFG grant (that included a 3 years postdoctoral position) to carry out our research in Leipzig University (end of 2010-2014). After my period in Leipzig I returned back to Spain as a postdoctoral researcher at the "Instituto de Ciencias Materiales de Aragón" under supervision of prof. Luis Martín Moreno for a few months (2015). In 2015 I obtained my first "Profesor Ayudante Doctor" (PAYUD) position at the "Universidad Politécnica de Madrid" where I stayed until 2018. In 2018 I finally moved to Valladolid University after winning the competition for another PAYUD position at the Theoretical Physics group, where I am based now.

Author of 31 scientific papers, cited more than 300 times (WoS). According to WoS my h-index is 10.

Co-advisor of 3 Master Theses and 2 Degree Theses. Co-advising 2 PhD students awarded with FPU-fellowships.



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.

Qualified for "Profesor Ayudante Doctor", "Profesor Contratado Doctor", and "Profesor de Universidad Privada" by the ANECA since 2014.

I was awarded a FPU fellowship to do my PhD under supervision of M. Asorey in Zaragoza University (2009). Afterwards, with the support of Michael Bordag I obtained a short-visit grant from the ERC CASIMIR-Network to work at Leipzig University for three months(2010). As a result M. Bordag and I were awarded with a DFG grant (that included a 3 years postdoctoral position) to carry out our research in Leipzig University (end of 2010-2014). After my period in Leipzig I returned back to Spain as a postdoctoral researcher at the "Instituto de Ciencias Materiales de Aragón" under supervision of prof. Luis Martín Moreno for a few months (2015). In 2015 I obtained my first "Profesor Ayudante Doctor" (PAYUD) position at the "Universidad Politécnica de Madrid" where I stayed until 2018. In 2018 I finally moved to Valladolid University after winning the competition for another PAYUD position at the Theoretical Physics group, where I am based now. Since October 2020, I hold a position of "Profesor Contratado Doctor (interino)" at Valladolid University.

Author of 36 scientific papers, cited more than 300 times (WoS). According to WoS my h-index is 11.

Co-advisor of 3 Master Theses and 2 Degree Theses. Co-advising 2 PhD students awarded with FPU-fellowships.

**Jose María Muñoz Castañeda**

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 Name: **Jose María**
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 ORCID: **0000-0003-4263-0564**
 ScopusID: **23091546300**
 ResearcherID: **D-8357-2018**
 Date of birth: **12/12/1981**
 Gender: **Male**
 Nationality: **Spain**
 Country of birth: **Spain**
 Aut. region/reg. of birth: **Castile and León**
 Contact province: **Valladolid**
 City of birth: **Salamanca**
 Contact address: **Facultad deCiencias, Universidad de Valladolid**
 Postcode: **47011**
 Contact country: **Spain**
 Contact aut. region/reg.: **Castile and León**
 Contact city: **Valladolid**
 Email: **jose.munoz.castaneda@uva.es**
 Personal web page: **https://scholar.google.es/citations?user=Efh_MXoAAAAJ&hl=es**

Current professional situation

Employing entity: Universidad de Valladolid **Type of entity:** University
Department: Facultad de Ciencias
Professional category: Profesor Contratado Doctor (interino)
Start date: 19/10/2020
Type of contract: Permanent employment **Dedication regime:** Full time contract
Primary (UNESCO code): 221212 - Quantum field theory
Secondary (UNESCO code): 229001 - Theoretical Physics high-energy

Previous positions and activities

	Employing entity	Professional category	Start date
1	Universidad de Valladolid	Profesor Ayudante Doctor	16/03/2018
2	Universidad Politécnica de Madrid	Profesor Ayudante Doctor	19/10/2015
3	Instituto de Ciencia de Materiales de Aragón	Postdoc	01/04/2015
4	Leipzig University	Research guest	02/10/2013
5	Universidad de Leipzig	DFG-Postdoctoral fellow	01/10/2010
6	University of Leipzig	DFG Research Guest	05/2010
7	University of Zaragoza	Research Associate	01/2009



	Employing entity	Professional category	Start date
8	University of Zaragoza	Research Assistant/PhD-student (FPU-Spanish government fellow)	01/2005

1 **Employing entity:** Universidad de Valladolid **Type of entity:** University
Department: Departamento de Física Teórica Atómica y Óptica, Facultad de Ciencias
City employing entity: Valladolid, Castile and León, Spain
Professional category: Profesor Ayudante Doctor **Educational Management (Yes/No):** Yes
Start-End date: 16/03/2018 - 18/10/2020 **Duration:** 2 years - 7 months - 2 days
Type of contract: Temporary employment contract
Dedication regime: Full time
Primary (UNESCO code): 221212 - Quantum field theory
Secondary (UNESCO code): 129900 - Other mathematical specialities
Tertiary (UNESCO code): 229001 - Theoretical Physics high-energy
Performed tasks: My main teaching tasks are the lectures on Theoretical Mechanics and Complex analysis in the Physics degree program, and Advanced Quantum Field Theory and Topology and Physics in the master program in physics. My research is focused on Mathematical/Theoretical Physics: pseudo-differential elliptic operators with singularities in quantum field theory applied to materials science, nanotechnology, quantum optics, and and space technologies. One of my central interesrests is the research on possible applications of the quantum vacuum force to develop pseudo-analytical models for applications in open-space nanotechnological devides.

2 **Employing entity:** Universidad Politécnica de Madrid **Type of entity:** University
Department: Física aplicada a las Ingenierías aeronáuticas y naval, Escuela Técnica Superior de Ingenieros Aeronáuticos
Professional category: Profesor Ayudante Doctor **Educational Management (Yes/No):** Yes
Start-End date: 19/10/2015 - 15/03/2018
Type of contract: Temporary employment contract
Performed tasks: Between October 2015 and March 2018 I was "Profesor Ayudante Doctor" at the UPM. My main teaching tasks were the lectures on Physics 1 and 2 at the aeronautics engineering degree. My research was focused on Mathematical/Theoretical Physics: pseudo-differential elliptic operators with singularities in quantum field theory applied to materials science, nanotechnology, quantum optics, and and space technologies. One of my central interesrests is the research on possible applications of the quantum vacuum force to develop pseudo-analytical models for applications in open-space nanotechnological devides.
Field of management activity: University

3 **Employing entity:** Instituto de Ciencia de Materiales de Aragón **Type of entity:** University Research Institute
Professional category: Postdoc **Educational Management (Yes/No):** No
Start-End date: 01/04/2015 - 18/10/2015
Type of contract: Grant-assisted student (pre or post-doctoral, others)
Performed tasks: Research activity: pseudo-differential elliptic operators in quantum field theory applied to materials science

4 **Employing entity:** Leipzig University **Type of entity:** University
Department: Institut für Theoretische Physik
City employing entity: Leipzig, Germany
Professional category: Research guest **Educational Management (Yes/No):** No



Start-End date: 02/10/2013 - 30/03/2015

Duration: 1 year - 5 months

Primary (UNESCO code): 221212 - Quantum field theory

Performed tasks: Research activity: pseudo-differential elliptic operators with singularities in quantum field theory applied to materials science, nanotechnology, and quantum optics

5 **Employing entity:** Universidad de Leipzig **Type of entity:** University

Department: Institut Für Theoretische Physik

City employing entity: Leipzig, Leipzig, Germany

Professional category: DFG-Postdoctoral fellow **Educational Management (Yes/No):** Yes

Phone: (+49) 341-97/32420

Fax: (+49) 341-97/32450

Email: Lea.Voigt@itp.uni-leipzig.de

Start-End date: 01/10/2010 - 01/10/2013

Duration: 3 years

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

Primary (UNESCO code): 221212 - Quantum field theory

Secondary (UNESCO code): 221205 - Gravitation

Tertiary (UNESCO code): 129900 - Other mathematical specialities

Performed tasks: Research The research carried out is about the quantum vacuum interaction between topological objects and quantum fields in the presence of boundaries as an application of the theory of selfadjoint extensions of pseudo-differential operators and quantum dynamical systems. Applications of this basic research in quantum field theory (in curved and flat spacetime) can be found in the areas of condensed matter, Casimir effect, quantum optics, quantum information, cosmology, and string theory. During my period in Leipzig university I had the opportunity to start collaborations with very well known researchers in theoretical/mathematical physics: D. Vassilevich (Mathematics Department at ABC university, Brazil), K. Kirsten (Mathematics department at Baylor university, USA) and M. Bordad (Leipzig university, Germany). Also I had the opportunity of being part of the CASIMIR-ESF network and get in contact with very well known researchers in the area of quantum vacuum energy and the Casimir effect. During these 3 years I have carried out some teaching at the undergraduate and master level. Undergraduate: classical electrodynamics, and theoretical mechanics Master level: master thesis advisor

Identify key words: Quantum mechanics; Quantum field theory in curved spacetime; Physics - Mathematical physics; Mathematical basis of field theory; Cords theory and theory; Teoria de campos conformes [eng]; Quantum field theory; Supersymmetry and supergravity

Field of management activity: University

Applicability in teaching and/or research: I have been interested in teaching theoretical and mathematical physics and I still interested. I had the opportunity to give lectures on topics as classical electrodynamics and theoretical mechanics to physicists and mathematicians. My research interests during this period have been focused on developing applications of the theory of quantum fields over bounded domains to the area of Casimir effect and quantum vacuum physics. The quantum vacuum plays a central role in many areas of modern physics (experimental and theoretical). In particular we have focused our attention on the quantum vacuum interaction between topological objects such as kinks and cosmic strings. The quantum theory of boundary conditions allows to interpret the boundary conditions as topological defects in certain cases. This fact allows to compute the quantum vacuum interaction energy between such topological objects in certain regimes.

6 **Employing entity:** University of Leipzig **Type of entity:** University

City employing entity: Leipzig, Germany

Professional category: DFG Research Guest

Educational Management (Yes/No): No

Start-End date: 05/2010 - 08/2010

Duration: 3 months

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

Primary (UNESCO code): 129900 - Other mathematical specialities; 221212 - Quantum field theory

Secondary (UNESCO code): 120214 - Hilbert spaces; 120216 - Integral transform; 120299 - Other

Performed tasks: Pseudo-differential elliptic operators, self-adjoint extensions, Quantum Field Theory, Boundary Effects, Casimir Effect, Bounded domains, Boundary conditions, Topological Defects (classical and quantum), dynamical systems, non-linear differential equations.



- 7** **Employing entity:** University of Zaragoza
Department: Theoretical Physics Department, Faculty of Sciences
City employing entity: Zaragoza, Aragon, Spain
Professional category: Research Associate **Educational Management (Yes/No):** Yes
Start-End date: 01/2009 - 02/2010 **Duration:** 1 year
Type of contract: Temporary
Primary (UNESCO code): 221205 - Gravitation; 221212 - Quantum field theory
Performed tasks: Theory of pseudo differential elliptic operators in Quantum Field Theory, self-adjoint extensions, Boundary Effects, Casimir Energy, Conformal Field Theory, Bounded domains, Gauge Fields, Boundary conditions, Topological Defects (classical and quantum), AdS/CFT.
Applicability in teaching and/or research: Teaching assistant
- 8** **Employing entity:** University of Zaragoza
Department: Theoretical Physics department, Sciences faculty
City employing entity: Zaragoza, Aragon, Spain
Professional category: Research **Educational Management (Yes/No):** Yes
Assistant/PhD-student (FPU-Spanish government fellow)
Start-End date: 01/2005 - 12/2009 **Duration:** 4 years
Type of contract: Grant-assisted student (pre or post-doctoral, others)
Dedication regime: Full time
Primary (UNESCO code): 221204 - Fields; 221212 - Quantum field theory; 221214 - Theory of relativity; 221299 - Other (specify)
Performed tasks: Dynamics of gauge fields associated to symplectic connections, dynamics of massless particles with helicity three, radiative corrections, Quantum Field Theory, Boundary Effects, Casimir Energy, Conformal Field Theory, Bounded domains, Gauge Fields, Boundary conditions, Topological Defects (classical and quantum), AdS/CFT.
Field of management activity: University
Applicability in teaching and/or research: Teaching duties since January 2007



Education

University education

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

1 **University degree:** tesina de grado

Name of qualification: Grado de Salamanca (tesina)/Master thesis USAL

City degree awarding entity: Salamanca, Castile and León, Spain

Degree awarding entity: Salamanca University **Type of entity:** University

Date of qualification: 11/2005

Foreign qualification: Sobresaliente CUM LAUDE

2 **University degree:** Higher degree

Name of qualification: Degree in Physics; specialized in theoretical/mathematical physics

City degree awarding entity: Salamanca, Castile and León, Spain

Degree awarding entity: Salamanca University **Type of entity:** University

Date of qualification: 21/09/2004

Prize: Among the 5 best students: 2.44 over 4

Doctorates

Doctorate programme: Programa Oficial de Doctorado en Física (Physics PhD program)

Degree awarding entity: Zaragoza University

City degree awarding entity: Zaragoza, Aragon, Spain

Date of degree: 08/10/2009

DEA awarding entity: Universidad de Zaragoza

Thesis title: Efectos de borde en teoría cuántica de campos (Boundary effects in quantum field theory)

Thesis director: Manuel Asorey

Obtained qualification: sobresaliente cum laude

Recognition of quality: Yes

Language skills

Language	Listening skills	Reading skills	Spoken interaction	Speaking skills	Writing skills
French		A1	A1	A1	A1
German		B1	A1	A1	A1
English		C1	C1	C1	C1



Teaching experience

General teaching experience

- 1** **Type of teaching:** Official teaching
Name of the course: MÉTODOS MATEMÁTICOS DE LA FÍSICA II
Professional category: Profesor Ayudante Doctor
Type of programme: Diploma **Type of teaching:** In person theory
Type of subject: Obligatory
University degree: Grado en Física
Course given: 2
Start date: 10/09/2018 **End date:** 31/01/2019
Type of hours/ ECTS credits: Hours
Hours/ECTS credits: 82
Entity: Universidad de Valladolid **Type of entity:** University
Faculty, institute or centre: Facultad de Ciencias
Department: Departamento de Física Teórica Atómica y Óptica
City of entity: Valladolid, Castile and León, Spain
- 2** **Type of teaching:** Official teaching
Type of programme: Master's degree **Type of teaching:** In person theory
Type of subject: Optional
University degree: Master in Physics
Start date: 22/10/2018 **End date:** 29/11/2018
Type of hours/ ECTS credits: Hours
Hours/ECTS credits: 16
Entity: Universidad de Valladolid **Type of entity:** University
Faculty, institute or centre: Facultad de Ciencias
Department: Dept de Física Teórica Atómica y Óptica
City of entity: Valladolid, Castile and León, Spain
Subject language: Spanish
- 3** **Type of teaching:** Official teaching
Name of the course: TEORÍA CUÁNTICA DE CAMPOS (QUANTUM FIELD THEORY)
Type of programme: Master's degree **Type of teaching:** In person theory
Type of subject: Optional
University degree: Master in Physics
Start date: 17/09/2018 **End date:** 19/10/2018
Type of hours/ ECTS credits: Hours
Hours/ECTS credits: 24
Entity: Universidad de Valladolid **Type of entity:** University
Faculty, institute or centre: Facultad de Ciencias
Department: Departamento de Física Teórica Atómica y Óptica
City of entity: Valladolid, Castile and León, Spain
Subject language: Spanish



- 4** **Type of teaching:** Official teaching
Name of the course: Física 2
Type of programme: Diploma **Type of teaching:** Laboratory work
Type of subject: Obligatory
University degree: Graduado o Graduada en Ingeniería Naval
Start date: 01/02/2017 **End date:** 01/07/2017
Entity: Escuela Técnica Superior de Ingenieros Navales **Type of entity:** University Centres and Structures and Associated Bodies
City of entity: Madrid, Community of Madrid, Spain
Subject language: Spanish
- 5** **Name of the course:** Física 1
University degree: Graduado o Graduada en Ingeniería Aeroespacial
Start date: 26/10/2015 **End date:** 09/01/2017
Entity: Escuela Técnica Superior de Ingenieros Aeronáuticos **Type of entity:** University Centres and Structures and Associated Bodies
- 6** **Name of the course:** Física 1
University degree: Graduado o Graduada en Ingeniería Aeroespacial
Start date: 01/09/2016 **End date:** 08/01/2017
Entity: Escuela Técnica Superior de Ingenieros Aeronáuticos **Type of entity:** University Centres and Structures and Associated Bodies
- 7** **Type of teaching:** Official teaching
Name of the course: Física 2
Type of programme: Diploma **Type of teaching:** Laboratory work
Type of subject: Obligatory
University degree: Graduado o Graduada en Ingeniería Naval
Start date: 01/02/2016 **End date:** 01/07/2016
Entity: Escuela Técnica Superior de Ingenieros Navales **Type of entity:** University Centres and Structures and Associated Bodies
City of entity: Madrid, Community of Madrid, Spain
- 8** **Name of the course:** Theoretical Physics 1 (electrodynamics 1)
Type of subject: Obligatory
University degree: Degree in Physics
Start date: 03/2013 **End date:** 06/2013
Entity: Leipzig University **Type of entity:** University
Faculty, institute or centre: Institut für Theoretische Physik
Subject language: English
- 9** **Type of teaching:** International teaching
Name of the course: Master thesis
Type of programme: Master's degree
Type of subject: Obligatory
University degree: Master in Physics
Start date: 10/2010 **End date:** 08/2011
Type of hours/ ECTS credits: Hours
Hours/ECTS credits: 100
Entity: Leipzig University **Type of entity:** University
Faculty, institute or centre: Institut für Theoretische Physik



Subject language: English

10 Name of the course: Theoretical Mechanics

Type of subject: Obligatory

University degree: Degree in Physics

Start date: 10/2010

End date: 06/2011

Entity: Leipzig University

Type of entity: University

Faculty, institute or centre: Institut für Theoretische Physik

Subject language: English

11 Name of the course: Classical electrodynamics

Type of subject: Obligatory

University degree: Degree in physics

Start date: 10/2008

End date: 06/2009

Type of hours/ ECTS credits: Credits

Hours/ECTS credits: 60

Entity: Universidad de Zaragoza

Type of entity: University

Faculty, institute or centre: Facultad de Ciencias

12 Name of the course: Theoretical mechanics

Type of subject: Obligatory

University degree: Degree in Physics

Start date: 01/10/2008

End date: 15/01/2009

Type of hours/ ECTS credits: Credits

Hours/ECTS credits: 60

Entity: Universidad de Zaragoza

Type of entity: University

Faculty, institute or centre: Facultad de Ciencias

13 Name of the course: Classical electrodynamics

Type of subject: Obligatory

University degree: Degree in physics

Start date: 10/2007

End date: 06/2008

Type of hours/ ECTS credits: Credits

Hours/ECTS credits: 60

Entity: Universidad de Zaragoza

Type of entity: University

Faculty, institute or centre: Facultad de Ciencias

14 Name of the course: Theoretical Mechanics

Type of subject: Obligatory

University degree: Degree in physics

Start date: 10/2007

End date: 06/2008

Type of hours/ ECTS credits: Credits

Hours/ECTS credits: 60

Entity: Universidad de Zaragoza

Type of entity: University

Faculty, institute or centre: Facultad de Ciencias



Experience supervising doctoral thesis and/or final year projects

- 1** **Project title:** Master Thesis: ON THE CASIMIR ENERGY AND THE TGTG-FORMULA FOR A SIMPLE CURVED BACKGROUND
Entity: Universidad Complutense de Madrid **Type of entity:** University
Student: Lucía Santamaría Sanz
Date of reading: 05/07/2018
- 2** **Project title:** Potenciales singulares en sistemas cuánticos tridimensionales y aplicaciones físicas
Type of project: TRABAJO DE FIN DE GRADO
Co-director of thesis: Jose M. Muñoz Castañeda; Luis M Nieto Calzada
Entity: Universidad de Valladolid **Type of entity:** University
Student: Lucía Santamaría Sanz
Date of reading: 07/2017
- 3** **Project title:** Bordes fronteras y entropías en física cuántica a bajas dimensiones
Type of project: TRABAJO DE FIN DE MÁSTER
Co-director of thesis: Jose M. Muñoz Castañeda; Luis M Nieto Calzada; Miguel Ángel Rodríguez González; Piergiulio Tempesta
Entity: Universidad Complutense de Madrid **Type of entity:** University
Student: CÉSAR ROMANIEGA SANCHO
Date of reading: 2017
- 4** **Project title:** ANÁLISIS DE POTENCIALES SINGULARES EN SISTEMAS CUÁNTICOS BIDIMENSIONALES
Type of project: TRABAJO DE FIN DE GRADO
Co-director of thesis: Jose M. Muñoz Castañeda; Luis M Nieto Calzada
Entity: Universidad de Valladolid **Type of entity:** University
Student: CÉSAR ROMANIEGA SANCHO
Obtained qualification: SOBRESALIENTE
Date of reading: 17/07/2016
- 5** **Project title:** Master Thesis (DEA): Vacuum interaction between one-dimensional crystals
Co-director of thesis: Michael Bordag
Entity: Universität Leipzig
Student: Radomir Sevillano Borkowski
Obtained qualification: 1,7
Date of reading: 31/08/2011



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:** NUEVOS RETOS EN SISTEMAS DINÁMICOS SUPERSIMÉTRICOS Y SUPERINTEGRABLES (MTM2014-57129-C2-1-P)
Type of project: Basic research (including archaeological digs, etc) **Geographical area:** National
Degree of contribution: Researcher
Entity where project took place: Universidad de Valladolid **Type of entity:** University
Name principal investigator (PI, Co-PI....): Javier Negro; Luis Miguel Nieto Calzada
Type of participation: Team member
Code according to the funding entity: MTM2014-57129-C2-1-P
Start-End date: 01/01/2015 - 31/12/2018 **Duration:** 4 years
Total amount: 85.100 €
- 2** **Name of the project:** ESTRUCTURACIONES MATEMMATICAS EN SISTEMAS CUANTICOS Y SUS APLICACIONES MTM2011-16027
Entity where project took place: Instituto Universitario de Investigación de Biocomputación y Física de Sistemas Complejos **Type of entity:** University Research Institute
City of entity: Spain
Name principal investigator (PI, Co-PI....): Jesus Clemente Gallardo
Funding entity or bodies: Ministerio de Ciencia e Innovación. Investigación **Type of entity:** national science foundation-spanish government
City funding entity: Madrid, Community of Madrid, Spain
Start-End date: 06/2012 - 06/2013
Total amount: 3.000 €
- 3** **Name of the project:** Quantum vacuum interaction between topological objects. BO 1112/18-1
Entity where project took place: Leipzig university
City of entity: Leipzig, Germany
Name principal investigator (PI, Co-PI....): Michael Bordag
Funding entity or bodies: DFG **Type of entity:** German science foundation-german government
Start-End date: 2010 - 2013
- 4** **Name of the project:** New trends and applications of the Casimir effect (CASIMIR network)
Entity where project took place: EU-european universities
Name principal investigator (PI, Co-PI....): Astrid Lambrecht
Funding entity or bodies:



European Union

Type of entity: European Science Foundation (ESF)

Start-End date: 2008 - 2013

5 Name of the project: Física cuántica de campos y sus aplicaciones en física de altas energías FPA2006-2315

Entity where project took place: Universidad de Zaragoza **Type of entity:** University

City of entity: Spain

Name principal investigator (PI, Co-PI....): Vicente Azcoiti

Nº of researchers: 12

Funding entity or bodies:

Comisión Interministerial de Ciencia y Tecnología **Type of entity:** national science foundation-spanish government

City funding entity: Madrid, Community of Madrid, Spain

Start-End date: 2010 - 2012

6 Name of the project: Vacuum and topological defect fluctuations. Generalized zeta functions, supersymmetry and integrability FIS2009-10546

Type of project: Basic research (including archaeological digs, etc) **Geographical area:** National

Degree of contribution: Researcher

Entity where project took place: Universidad de Salamanca **Type of entity:** University

City of entity: Spain

Name principal investigator (PI, Co-PI....): JUAN Mateos Guilarte

Funding entity or bodies:

Comisión Interministerial de Ciencia y Tecnología **Type of entity:** national science foundation-spanish government

City funding entity: Madrid, Community of Madrid, Spain

Type of participation: Team member

Start-End date: 2009 - 2012

Duration: 4 years

7 Name of the project: Programa centro nacional de física de partículas, Astropartículas, y nuclear (Consolider-Ingenio 2010). CSD2007-00042

Name principal investigator (PI, Co-PI....): Antonio Pich

Nº of researchers: 25

Funding entity or bodies:

Ministerio de Ciencia e Innovación. Investigación **Type of entity:** national science foundation-spanish government

City funding entity: Madrid, Community of Madrid, Spain

Start-End date: 2007 - 2012

8 Name of the project: Fundamental aspects of quantum field theories FPA2008-03714/INFN

Entity where project took place: Universidad de Zaragoza **Type of entity:** University

Name principal investigator (PI, Co-PI....): Manuel Asorey

Funding entity or bodies:

Ministerio de Ciencia e Innovación. Investigación **Type of entity:** national science foundation-spanish government

City funding entity: Madrid, Community of Madrid, Spain



Start-End date: 2009 - 2010

9 Name of the project: Grupo teórico de altas energías (grupo de excelencia E24/2). Mención especial/
Theoretical group of high energies

Entity where project took place: Universidad de Zaragoza **Type of entity:** University

City of entity: Zaragoza, Aragon, Spain

Name principal investigator (PI, Co-PI....): Manuel Asorey

Nº of researchers: 13

Funding entity or bodies:

Diputación General de Aragón

Type of entity: DGI (Aragón science foundation)

City funding entity: Zaragoza, Aragon, Spain

Start-End date: 2008 - 2010

10 Name of the project: Red nacional de física de partículas (national network of particle physics).
FPA2007-30008-E

Name principal investigator (PI, Co-PI....): Manuel Asorey

Nº of researchers: 25

Funding entity or bodies:

Comisión Interministerial de Ciencia y Tecnología

Type of entity: DGI-MEC. National science foundation-spanish government

City funding entity: Madrid, Community of Madrid, Spain

Start-End date: 2008 - 2010

11 Name of the project: Teoría cuántica de campos y física de partículas (Quantum theory of fields and particles) FPA2006-2315

Entity where project took place: Universidad de Zaragoza **Type of entity:** University

City of entity: Zaragoza, Aragon, Spain

Name principal investigator (PI, Co-PI....): Jose Luis Cortés Azcoiti

Nº of researchers: 12

Funding entity or bodies:

Comisión Interministerial de Ciencia y Tecnología

Type of entity: National science foundation-spanish government

City funding entity: Madrid, Community of Madrid, Spain

Start-End date: 2007 - 2009

12 Name of the project: Fundamental aspects of quantum field theories (bilateral cooperation program between HEP research groups of Zaragoza and Naples universities: complementary action) INFN08-29

Entity where project took place: Zaragoza and Naples universities **Type of entity:** University

Name principal investigator (PI, Co-PI....): Manuel Asorey Carballeira

Nº of researchers: 7

Funding entity or bodies:

SGPI-DGI

Type of entity: NATIONAL SCIENCE FOUNDATION-ITALIAN GOVERNMENT

City funding entity: Italy

Comisión Interministerial de Ciencia y Tecnología

Type of entity: National science foundation-spanish government

City funding entity: Madrid, Community of Madrid, Spain



Start-End date: 2008 - 2008

13 Name of the project: High Energy Physics: Particles, Strings, and Cosmology (Zaragoza and Rabat universities) A/9335/07

Entity where project took place: Zaragoza and Rabat universities **Type of entity:** University

Name principal investigator (PI, Co-PI....): Manuel Asorey

N° of researchers: 16

Funding entity or bodies:

Agencia Española de Cooperación Internacional **Type of entity:** PCI (MAEC)

City funding entity: Madrid, Community of Madrid, Spain

Start-End date: 2007 - 2008

14 Name of the project: Fundamental aspects of quantum field theories (bilateral cooperation program between HEP research groups of Zaragoza and Naples universities: complementary action) FPA2006-27302-E

Entity where project took place: Zaragoza and Naples universities **Type of entity:** University

Name principal investigator (PI, Co-PI....): Manuel Asorey

N° of researchers: 7

Funding entity or bodies:

SGPI-DGI **Type of entity:** NATIONAL SCIENCE FOUNDATION-ITALIAN GOVERNMENT

City funding entity: Italy

Comisión Interministerial de Ciencia y Tecnología **Type of entity:** National science foundation-spanish government

City funding entity: Madrid, Community of Madrid, Spain

Start-End date: 2006 - 2006

15 Name of the project: THEORETICAL GROUP OF HIGH ENERGIES "Grupo teórico de altas energias (Grupo consolidado; E24/2)". Special mention

Entity where project took place: Universidad de Zaragoza **Type of entity:** University

City of entity: Zaragoza, Aragon, Spain

Name principal investigator (PI, Co-PI....): Manuel Asorey

N° of researchers: 13

Funding entity or bodies:

Diputación General de Aragón **Type of entity:** regional science foundation (DGA)

City funding entity: Zaragoza, Aragon, Spain

Start-End date: 2006 - 2006

16 Name of the project: Fisica cuántica de campos no perturbativa (FPA2003-02948)

Entity where project took place: Universidad de Zaragoza **Type of entity:** University

City of entity: Zaragoza, Aragon, Spain

Name principal investigator (PI, Co-PI....): Jose Luis Cortés Azcoiti

N° of researchers: 12

Funding entity or bodies:

Comisión Interministerial de Ciencia y Tecnología **Type of entity:** Public Research Body

Start-End date: 2003 - 2006



- 17** **Name of the project:** Fundamental aspects of quantum field theories (bilateral cooperation program between HEP research groups of Zaragoza and Naples universities)
Entity where project took place: Zaragoza and Naples universities **Type of entity:** University
Name principal investigator (PI, Co-PI...): Manuel Asorey
Nº of researchers: 7
Funding entity or bodies: Comisión Interministerial de Ciencia y Tecnología **Type of entity:** National science foundation-spanish government
City funding entity: Madrid, Community of Madrid, Spain
Start-End date: 2005 - 2005
- 18** **Name of the project:** THEORETICAL GROUP OF HIGH ENERGIES "Grupo teórico de altas energías (Grupo consolidado; E24/2)". Special mention
Entity where project took place: Universidad de Zaragoza **Type of entity:** University
City of entity: Zaragoza, Aragon, Spain
Name principal investigator (PI, Co-PI...): Manuel Asorey
Nº of researchers: 11
Funding entity or bodies: Diputación General de Aragón **Type of entity:** regional science foundation (DGA)
City funding entity: Zaragoza, Aragon, Spain
Start-End date: 2004 - 2005

Scientific and technological activities

Scientific production

Publications, scientific and technical documents

- 1** M. Gadella; J. M. Mateos Guilarte; J. M. Muñoz-Castañeda; L. M. Nieto; L. Santamaría-Sanz. Band spectra of periodic δ - δ structures. The European Physical Journal Plus. 135 - 786, Springer, 06/10/2020. Available on-line at: <<https://link.springer.com/content/pdf/10.1140/epjp/s13360-020-00818-6.pdf>>.
DOI: 10.1140/epjp/s13360-020-00818-6
Type of production: Scientific paper **Format:** Journal
Position of signature: 3
Total no. authors: 5 **Corresponding author:** No
- 2** Jose M Muñoz Castañeda; Lucía Santamaría Sanz; Manuel Donaire del Yerro; Marcos Tello Fraile. Thermal Casimir effect with general boundary conditions. The European Physical Journal C. 80 - 793, Springer, 29/08/2020. Available on-line at: <<https://link.springer.com/content/pdf/10.1140/epjc/s10052-020-8348-1.pdf>>.
DOI: 10.1140/epjc/s10052-020-8348-1
Type of production: Scientific paper **Format:** Journal
Position of signature: 1
Total no. authors: 4 **Corresponding author:** Yes



- 3** Michael Bordag; Jose M. Muñoz Castañeda; Lucía Santamaría Sanz. Free energy and entropy for finite temperature quantum field theory under the influence of periodic backgrounds. The European Physical Journal C. 80 - 221, Springer, 07/03/2020. Available on-line at: <<https://doi.org/10.1140/epjc/s10052-020-7783-3>>.
DOI: epjc/s10052-020-7783-3
Type of production: Scientific paper **Format:** Journal
Position of signature: 2
Total no. authors: 3 **Corresponding author:** Yes
- 4** Jose M Muñoz Castañeda; Michael Bordag; Lucía Santamaría Sanz. Revisiting the Casimir energy with general boundary conditions and applications in 1D crystals. Modern Physics Letters A. 35 - 3, pp. 2040018. World Scientific, 16/01/2020. Available on-line at: <<https://doi.org/10.1142/S0217732320400180>>.
Type of production: Scientific paper **Format:** Journal
Position of signature: 1
Total no. authors: 3 **Corresponding author:** Yes
- 5** Juliette Archambeau; Paloma Ruiz-Benito; Sophia Ratcliffe; Thibaut Fréjaville; Alexandre Chagnenet; Jose M Muñoz Castañeda; Aleksii Lehtonen; Jonas Dahlgren; Miguel A Zavala; Marta Benito Garzón. Similar patterns of background mortality across Europe are mostly driven by drought in European beech and a combination of drought and competition in Scots pine. Agricultural and forest meteorology. 280, pp. 107772. Elsevier, 15/01/2020. Available on-line at: <<https://dx.doi.org/10.1016/j.agrformet.2019.107772>>.
Type of production: Scientific paper **Format:** Journal
Position of signature: 6
Total no. authors: 10 **Corresponding author:** No
- 6** Juan Mateos Guilarte; Jose M Muñoz Castañeda; Irina Pirozhenko; Lucia Santamaria-Sanz. One-dimensional scattering of fermions on δ -impurities. Frontiers in Physics. 7 - 109, 08/2019.
DOI: 10.3389/fphy.2019.00109
Type of production: Scientific paper **Format:** Journal
Corresponding author: Yes
Relevant results: Frontiers in Physics is included in the JCR since 2018. Impact factor for 2019 is not yet available.
- 7** Manuel Donaire; Jose María Muñoz Castañeda; Luis Miguel Nieto; Marcos Tello Fraile. Field Fluctuations and Casimir Energy of 1D-Fermions. Symmetry. 11 - 5, pp. 643. MDPI, 05/2019.
DOI: 10.3390/sym11050643
Type of production: Scientific paper
- 8** Michael Bordag; Jose M Muñoz Castañeda; Lucia Santamaria-Sanz. Vacuum energy for generalised Dirac combs at $T = 0$. Frontiers in Physics. 03/2019.
DOI: 10.3389/fphy.2019.00038
Type of production: Scientific paper **Format:** Journal
Corresponding author: Yes
Relevant results: Frontiers in Physics is included in the JCR since 2018
- 9** Jose M Muñoz Castañeda; L M Nieto. Hyperspherical δ - δ potentials. Annals of Physics. 400, pp. 246 - 261. ACADEMIC PRESS INC ELSEVIER SCIENCE, 01/2019.
Type of production: Scientific paper **Format:** Journal
Corresponding author: Yes
Relevant results: Impact factors are not available for 2018 and 2019.

- 10** Eduardo Weruaga; Rodrigo Muñoz-Castañeda; David Díaz; Leticia Peris; Annie Andrieux; Christophe Bosc; Jose M Muñoz Castañeda; Carsten Janke; José R. Alonso; Marie-Jo Moutin. Cytoskeleton stability is essential for the integrity of the cerebellum and its motor-and affective-related behaviors. *Scientific Reports*. 8 - 1, pp. 3072. NATURE PUBLISHING GROUP, 15/02/2018.
Type of production: Scientific paper **Format:** Journal
Impact source: ISI **Category:** Science Edition - MULTIDISCIPLINARY SCIENCES
Impact index in year of publication: 4.122 **Journal in the top 25%:** Yes
Position of publication: 12 **No. of journals in the cat.:** 64
- 11** Manuel Donaire; Jose M Muñoz Castañeda; Luis Miguel Nieto Calzada. Dipole-dipole interaction in cavity QED: The weak-coupling, nondegenerate regime. *Physical Review A*. 96 - 4, pp. 042714. APS, 24/10/2017.
Type of production: Scientific paper **Format:** Journal
Corresponding author: No **Category:** Science Edition - OPTICS
Impact source: ISI **Journal in the top 25%:** Yes
Impact index in year of publication: 2.010 **No. of journals in the cat.:** 94
Position of publication: 23
- 12** Luis Miguel Nieto; Manuel Gadella; Juan Mateos Guilarte; José María Muñoz Castañeda; César Romaniega. Towards Modelling QFT in Real Metamaterials: Singular Potentials and Self-Adjoint Extensions. *Journal of Physics: Conference Series*. 839, pp. 012007. IOP, 2017. Available on-line at: <<https://iopscience.iop.org/article/10.1088/1742-6596/839/1/012007/pdf>>.
DOI: 10.1088/1742-6596/839/1/012007
Type of production: Scientific paper **Format:** Journal
- 13** T. R. Govindarajan; J. M. Muñoz-Castañeda. Modelling quantum black holes. *Modern Physics Letters A*. 31 - 39, pp. 1650210. World Scientific, 24/11/2016.
Type of production: Scientific paper **Format:** Journal
Impact source: ISI **Category:** Science Edition - PHYSICS, MATHEMATICAL
Impact index in year of publication: 1.165 **Journal in the top 25%:** No
Position of publication: 30 **No. of journals in the cat.:** 55
- 14** Manuel Gadella; J. Mateos Guilarte; J. M. Muñoz-Castañeda; L. M. Nieto. Two-point one-dimensional \mathbb{Z}_2 interactions: non-abelian addition law and exceptional couplings. *Journal of Physics A-Mathematical and Theoretical*. 49 - 1, pp. 015204. IOP PUBLISHING LTD, 01/2016. Available on-line at: <<http://arxiv.org/abs/1505.04359>>.
DOI: 10.1088/1751-8113/49/1/015204
Type of production: Scientific paper **Format:** Journal
Corresponding author: Yes **Category:** Science Edition - PHYSICS, MATHEMATICAL
Impact source: ISI **Journal in the top 25%:** Yes
Impact index in year of publication: 1.865 **No. of journals in the cat.:** 55
Position of publication: 12
- 15** Sohia Ratcliffe; Mario Liebergesell; Paloma Ruiz Benito; J. Madrigal Gonzalez; Jose M^o Muñoz Castañeda; Gerald Kändler; Aleksi Lehtonen; Jonas Dahlgren; Jens Kattge; Josep Peñuelas; Miguel A. Zavala; Christian Wirth. Modes of functional biodiversity control on tree productivity across the European continent. *GLOBAL ECOLOGY AND BIOGEOGRAPHY*. John Wiley & Sons, 11/12/2015.
DOI: 10.1111/geb.12406



Type of production: Scientific paper
Position of signature: 5
Total no. authors: 12
Impact source: ISI
Impact index in year of publication: 5.840
Position of publication: 1

Format: Journal

Corresponding author: No
Category: Science Edition - GEOGRAPHY, PHYSICAL
Journal in the top 25%: Yes
No. of journals in the cat.: 49

Relevant results: Journal in the top 10% in the categories of Ecology, and Geography, physical. The publication is a multidisciplinary science project: my contribution was providing mathematical statistical models based on the XY quantum mechanical system to model non linear interactions in the statistical model used in the paper.

- 16** J. M. Munoz Castaneda; J. Mateos Guilarte. δ ' generalized Robin boundary conditions and quantum vacuum fluctuations. Phys. Rev.D. 91, pp. 025028. APS, 2015. Available on-line at: <http://journals.aps.org/prd/abstract/10.1103/PhysRevD.91.025028>.

Type of production: Scientific paper
Impact source: ISI

Format: Journal

Category: Science Edition - PHYSICS, PARTICLES & FIELDS

Impact index in year of publication: 4.506
Position of publication: 8

Journal in the top 25%: Yes
No. of journals in the cat.: 28

Relevant results: Journal in the top 33.33% (T1) One of the 3D plots of in this publication was selected for the January 2015 online cover section "Kaleidoscope" of Phys.Rev.D

- 17** M. Bordag; J. M. Muñoz-Castañeda. Dirac lattices, zero-range potentials and self-adjoint extensions. Phys.Rev. D. 91 - 6, pp. 065027. APS, 2015. Available on-line at: <https://doi.org/10.1103/PhysRevD.91.065027>.

DOI: 10.1103/PhysRevD.91.065027

Type of production: Scientific paper
Position of signature: 2

Total no. authors: 2

Impact source: ISI

Category: Science Edition - PHYSICS, PARTICLES & FIELDS

Impact index in year of publication: 4.503
Position of publication: 8

Journal in the top 25%: Yes
No. of journals in the cat.: 28

Relevant results: Journal in the top 33.33% (T1)

- 18** J. Mateos Guilarte; Jose M. Munoz-Castaneda; A. Moreno Mosquera. On supersymmetric Dirac delta interactions. Eur. Phys. J. PLUS; arXiv:1403.1055[math-ph] (DOI: 10.1140/epjp/i2015-15048-x). 130 - 48, 2015. Available on-line at: <http://link.springer.com/article/10.1140%2Fepjp%2Fi2015-15048-x>; <http://arxiv.org/abs/1403.1055>. ISSN 2190-5444

Type of production: Scientific paper

Format: Journal

- 19** Jose María Muñoz Castañeda; Klaus Kirsten; Michael Bordag. QFT over the finite line. Heat kernel coefficients, spectral zeta functions and selfadjoint extensions. Lett. Math. Phys.105 - 4, pp. 523 - 549. Springer, 2015. Available on-line at: http://link.springer.com/article/10.1007/s11005-015-0750-5?sa_campaign=email/event/articleAuthor/onlineFirst. ISSN 0377-9017

Type of production: Scientific paper

Format: Journal

Impact source: ISI

Category: Science Edition - PHYSICS, MATHEMATICAL

Impact index in year of publication: 1.517
Position of publication: 21

Journal in the top 25%: No
No. of journals in the cat.: 53

- 20** M. Asorey; D. García-Álvarez; J. M. Muñoz-Castañeda. Boundary Effects in Bosonic and Fermionic Field theories. International Journal of Geometric Methods in Modern Physics. 12, pp. 1560004. World Scientific, 12/2014. Available on-line at: <<http://www.worldscientific.com/doi/abs/10.1142/S021988781560004X>>.
DOI: 10.1142/S021988781560004X
Type of production: Scientific paper
Impact source: ISI
Impact index in year of publication: 0.769
Position of publication: 41
Category: Science Edition - PHYSICS, MATHEMATICAL
Journal in the top 25%: No
No. of journals in the cat.: 53
- 21** J.M. Munoz-Castaneda; M. Bordag. Quantum vacuum interaction between two cosmic strings revisited. Phys. Rev. D. 89, pp. 065034. APS, 2014. Available on-line at: <<http://journals.aps.org/prd/abstract/10.1103/PhysRevD.89.065034>; <http://dx.doi.org/10.1103/PhysRevD.89.065034>>.
Type of production: Scientific paper
Impact source: ISI
Impact index in year of publication: 4.643
Position of publication: 5
Format: Journal
Category: Science Edition - PHYSICS, PARTICLES & FIELDS
Journal in the top 25%: Yes
No. of journals in the cat.: 27
- 22** M. Asorey; J.M. Munoz-Castaneda. Attractive and Repulsive Casimir Vacuum Energy with General Boundary Conditions. Nucl.Phys.B. 874, pp. 852 - 876. Elsevier, 2013. Available on-line at: <<http://www.sciencedirect.com/science/article/pii/S0550321313003301>; doi:10.1016/j.nuclphysb.2013.06.014>.
Type of production: Scientific paper
Impact source: ISI
Impact index in year of publication: 3.946
Position of publication: 8
Format: Journal
Category: Science Edition - PHYSICS, PARTICLES & FIELDS
Journal in the top 25%: No
No. of journals in the cat.: 27
Relevant results: Journal in the top 33.33% (T1)
- 23** Jose M. Munoz-Castaneda; J. Mateos Guilarte; A. Moreno Mosquera. Quantum vacuum energies and Casimir forces between partially transparent δ -function plates. Phys.Rev.D. 87 - 10, pp. 105020 - 105020. APS, 2013. Available on-line at: <<http://dx.doi.org/10.1103/PhysRevD.87.105020>>.
Type of production: Scientific paper
Impact source: ISI
Impact index in year of publication: 4.864
Position of publication: 6
Format: Journal
Category: Science Edition - PHYSICS, PARTICLES & FIELDS
Journal in the top 25%: Yes
No. of journals in the cat.: 27
- 24** Manuel Asorey; Jose M. Munoz-Castaneda. Boundary effects in quantum physics. INTERNATIONAL JOURNAL OF GEOMETRIC METHODS IN MODERN PHYSICS. 9 - 002, pp. 1260017 - 1260017. World Scientific, 2012. Available on-line at: <<http://www.worldscientific.com/doi/abs/10.1142/S0219887812600171>>.
Type of production: Scientific paper
Impact source: ISI
Impact index in year of publication: 0,951
Position of publication: 34
Format: Journal
Category: Science Edition - PHYSICS, MATHEMATICAL
Journal in the top 25%: No
No. of journals in the cat.: 55

- 25** M. Bordag; J.M. Munoz-Castaneda. Quantum vacuum interaction between two sine-Gordon kinks. *Journal of Physics A-Mathematical and Theoretical*. 45 - 37, pp. 374012 - 374012. IOP PUBLISHING LTD, 2012. Available on-line at: <<http://dx.doi.org/10.1088/1751-8113/45/37/374012>; <http://iopscience.iop.org/1751-8121/45/37/374012>>.
- Type of production:** Scientific paper
Impact source: ISI
Impact index in year of publication: 1.766
Position of publication: 13
- Format:** Journal
Category: Science Edition - PHYSICS, MATHEMATICAL
Journal in the top 25%: Yes
No. of journals in the cat.: 55
- 26** J. Mateos Guilarte; Jose M. Munoz-Castaneda. Double-delta potentials: one dimensional scattering. The Casimir effect and kink fluctuations. *INTERNATIONAL JOURNAL OF THEORETICAL PHYSICS*. 50 - 7, pp. 2227 - 2241. Springer, 2011. Available on-line at: <<http://link.springer.com/article/10.1007%2Fs10773-011-0723-0>; DOI: 10.1007/s10773-011-0723-0>.
- Type of production:** Scientific paper
Impact source: ISI
Impact index in year of publication: 0.845
Position of publication: 48
- Format:** Journal
Category: Science Edition - PHYSICS, MULTIDISCIPLINARY
Journal in the top 25%: Yes
No. of journals in the cat.: 84
- 27** J.M. Munoz-Castaneda; M. Bordag. Quantum Fields bounded by one dimensional crystal plates. *Journal of Physics A-Mathematical and Theoretical*. 44 - 41, pp. 415401. IOP PUBLISHING LTD, 2011. Available on-line at: <<http://dx.doi.org/10.1088/1751-8113/44/41/415401>; <http://iopscience.iop.org/1751-8121/44/41/415401>>.
- Type of production:** Scientific paper
Impact source: ISI
Impact index in year of publication: 1.564
Position of publication: 24
- Format:** Journal
Category: Science Edition - PHYSICS, MULTIDISCIPLINARY
Journal in the top 25%: No
No. of journals in the cat.: 84
- Relevant results:** Journal in the top 33.33% (T1)
- 28** Manuel Asorey; Inés Cavero-Peláez; José M. Munoz-Castaneda. Vacuum Energy and the Topology of the Universe. *Springer Proc.Phys.*137, pp. 35 - 44. Springer, 2011. Available on-line at: <http://dx.doi.org/10.1007/978-3-642-19760-4_3>. ISBN 978-3-642-19760-4
- Type of production:** Scientific paper
Impact source: ISI
Impact index in year of publication: 0.856
Position of publication: 48
- Format:** Journal
Category: Science Edition - PHYSICS, MULTIDISCIPLINARY
Journal in the top 25%: No
No. of journals in the cat.: 84
- 29** M. Asorey; J.M. Munoz-Castaneda. Vacuum boundary effects. *INTERNATIONAL JOURNAL OF GEOMETRIC METHODS IN MODERN PHYSICS*. 50, pp. 2211 - 2221. SPRINGER/PLENUM PUBLISHERS, 2011. Available on-line at: <<http://link.springer.com/article/10.1007%2Fs10773-011-0720-3> (DOI: 10.1007/s10773-011-0720-3)>. ISSN 1572-9575
- Type of production:** Scientific paper
Impact source: ISI
Impact index in year of publication: 0.856
Position of publication: 48
- Format:** Journal
Category: Science Edition - PHYSICS, MULTIDISCIPLINARY
Journal in the top 25%: No
No. of journals in the cat.: 84
- 30** M. Asorey; J.M. Munoz-Castaneda. Vacuum boundary effects. *NANOSYSTEMS: PHYSICS, CHEMISTRY AND MATHEMATICS*. 2(4), pp. 20 - 31. 2011. Available on-line at: <http://nanojournal.ifmo.ru/files/volume5/02_asorey.pdf>. ISSN 2305-7971
- Type of production:** Scientific paper
Impact source: ISI
Impact index in year of publication: 0.856
Position of publication: 48
- Format:** Journal
Category: Science Edition - PHYSICS, MULTIDISCIPLINARY
Journal in the top 25%: No
No. of journals in the cat.: 84



- 31** M. Asorey; J.M. Munoz-Castaneda. The world of boundaries without Casimir effect. in The Casimir effect and Cosmology. Ed. S. Odintsov et al. Tomsk State Ped. Univ. Press.pp. 153160 - 153160. 2009.
Type of production: Scientific paper **Format:** Journal
- 32** M. Asorey; J.M. Munoz-Castaneda. Vacuum Boundary Effects. Journal of Physics A-Mathematical and Theoretical. 41, pp. 304004 - 304004. IOP PUBLISHING LTD, 2008. Available on-line at: <<http://iopscience.iop.org/1751-8121/41/30/304004>; <http://dx.doi.org/10.1088/1751-8113/41/30/304004>>.
Type of production: Scientific paper **Format:** Journal
Impact source: ISI **Category:** Science Edition - PHYSICS, MULTIDISCIPLINARY
Impact index in year of publication: 1.540 **Journal in the top 25%:** No
Position of publication: 24 **No. of journals in the cat.:** 68
Relevant results: Top 34.5%
- 33** M. Asorey; J.M. Munoz-Castaneda. Vacuum Structure and Boundary Renormalization Group. Journal of Physics A-Mathematical and Theoretical. 41, pp. 164043 - 164043. 2008. Available on-line at: <<http://iopscience.iop.org/1751-8121/41/16/164043>; <http://dx.doi.org/10.1088/1751-8113/41/16/164043>>.
Type of production: Scientific paper **Format:** Journal
Impact source: ISI **Category:** Science Edition - PHYSICS, MULTIDISCIPLINARY
Impact index in year of publication: 1.540 **Journal in the top 25%:** No
Position of publication: 24 **No. of journals in the cat.:** 68
- 34** M. Asorey; J.M. Munoz-Castaneda; J. Clemente-Gallardo. Boundary conditions: The path integral approach. J.Phys.Conf.Ser.87, pp. 012004 - 012004. IOPScience, 2007. Available on-line at: <<http://iopscience.iop.org/1742-6596/87/1/012004>>.
Type of production: Scientific paper **Format:** Journal
- 35** A. Alonso Izquierdo; W. Garcia Fuertes; M.A. Gonzalez Leon; M. de la Torre Mayado; J. Mateos Guilarte; J. M. Munoz Castaneda. Lectures on the mass of topological solitons. arXiv: hep-th/0611180. 2007. Available on-line at: <<http://arxiv.org/abs/hep-th/0611180>>.
Type of production: Scientific paper **Format:** Scientific and technical document or report
- 36** M. Asorey; D. Garcia-Alvarez; J.M. Munoz-Castaneda. Vacuum Energy and Renormalization on the Edge. Journal of Physics A-Mathematical and Theoretical. 40, pp. 6767 - 6776. IOP PUBLISHING LTD, 2007. Available on-line at: <<http://dx.doi.org/10.1088/1751-8113/40/25/S21>; <http://iopscience.iop.org/1751-8121/40/25/S21/>>.
Type of production: Scientific paper **Format:** Journal
Impact source: ISI **Category:** Science Edition - PHYSICS, MULTIDISCIPLINARY
Impact index in year of publication: 1.455 **Journal in the top 25%:** No
Position of publication: 21 **No. of journals in the cat.:** 69
Relevant results: This publication is in the top 33.33% of the category (T1)
- 37** M. Asorey; D. Garcia-Alvarez; J.M. Munoz-Castaneda. Casimir Effect and Global Theory of Boundary Conditions. JOURNAL OF PHYSICS A-MATHEMATICAL AND GENERAL. 39, pp. 6127 - 6136. IOP PUBLISHING LTD, 2006. Available on-line at: <<http://iopscience.iop.org/0305-4470/39/21/S03>>.
Type of production: Scientific paper **Format:** Journal
Impact source: ISI **Category:** Science Edition - PHYSICS, MATHEMATICAL
Impact index in year of publication: 1.577 **Journal in the top 25%:** No
Position of publication: 13 **No. of journals in the cat.:** 41



Relevant results: This publication is within the to 1/3 journals of the category (T1)

- 38** Luis Miguel Nieto Calzada; Manuel Gadella; Juan Mateos Guilarte; Jose M Muñoz Castañeda; César Romaniega. Some recent results on contact or point supported potentials. Geometric Methods in Physics XXXVIII. pp. 197 - 219. Springer, 28/10/2020. Available on-line at: <https://link.springer.com/chapter/10.1007/978-3-030-53305-2_14>.
Type of production: Book chapter **Format:** Book
Position of signature: 4 **Degree of contribution:** Author or co-author of chapter in book
Total no. authors: 5 **Corresponding author:** No
- 39** J. Mateos Guilarte; J. M. Muñoz Castañeda; M. J. Senosiain. Scalar quantum fields on the half-line: A heat kernel/zeta function approach. Mathematical Physics and Field Theory, Julio Abad, In memoriam. pp. 277 - 287. P. U. Z. (Zaragoza university), 2009.
Type of production: Book chapter **Format:** Journal
- 40** M. Garcia-Alvarez D. Asorey; J.M.. Munoz-Castaneda. Symplectic Field Theories. Publicaciones de la RSME, R.Soc.Mat.Esp. 10, pp. 73 - 84. 2009.
Type of production: Book chapter **Format:** Journal
- 41** Inés Cavero Peláez (Ed); Jesús Clemente Gallardo (Ed); Giuseppe Marmo (Ed); Jose M Muñoz Castañeda (Ed). MSQS2012 Mathematical structures in quantum systems and applications. Il Nuovo Cimento. 36C N.3, 2013. Available on-line at: <<http://www.sif.it/riviste/ncc/econtents/2013/036/03>; <http://www.sif.it/riviste/ncc/econtents/2013/036/03/article/16>>.
Type of production: Scientific book or monograph **Format:** Book
- 42** Jose M Muñoz Castañeda. Efectos de borde en teoría cuántica de campos (Boundary effects in quantum field theory, in spanish). Universidad de Zaragoza. Universidad de Zaragoza (PUZ), 2009.
Type of production: PhD thesis **Format:** Book
- 43** Jose M Muñoz Castañeda. Vórtices cuánticos de Abrikosov-Nielsen-Olesen (Quantum Abrikosov-Nielsen-Olesen vortices, in spanish). Universidad de Salamanca. 2005. Available on-line at: <<http://campus.usal.es/~mpg/General/Thesis.htm>>.
Type of production: Master thesis **Format:** Book

Works submitted to national or international conferences

- 1** **Title of the work:** Minicourse for PhDs: "Quantum fields and boundaries"
Name of the conference: V International Workshop on Mathematical Foundations of Quantum Mechanics and its applications
City of event: Madrid, Community of Madrid, Spain
Date of event: 30/01/2017
End date: 10/02/2017
Organising entity: INSTITUTO DE CIENCIAS MATEMATICAS **Type of entity:** State agency
 Jose M Muñoz Castañeda.
- 2** **Title of the work:** Quantum fields in the presence of boundaries
Name of the conference: NANOMATH2016
City of event: Toulouse, France
Date of event: 27/06/2016



End date: 30/06/2016

Organising entity: CMES-CNRS

- 3** **Title of the work:** THE PURKINJE CELL DEGENERATION MUTANT MOUSE AS A MODEL FOR NEURODEVELOPMENTAL DISORDER.
Name of the conference: SENC Conference 2015
City of event: Granada, Andalusia, Spain
Date of event: 09/2015
Organising entity: SOCIEDAD ESPAÑOLA DE NEUROCIENCIA
Rodrigo Muñoz-Castañeda; David Díaz; José M. Muñoz-Castañeda; Carlos del Pilar; José R. Alosno; Carmelo Ávila; Eduardo Weruaga.
- 4** **Title of the work:** Quantum fields over bounded domains
Name of the conference: II Russian-Spanish Congress. Particle and Nuclear Physics at all Scales and Cosmology
City of event: S.Petersburg, Russia
Date of event: 01/10/2013
End date: 04/10/2013
Organising entity: Saint Petersburg State university
City organizing entity: S.Petersburg, Russia
- 5** **Title of the work:** Dirac delta configurations, boundary conditions, and quantum fluctuations of scalar fields
Name of the conference: Mathematical Structures in Quantum Systems and applications
City of event: Benasque, Aragon, Spain
Date of event: 08/07/2012
End date: 14/07/2012
Organising entity: FUNDACION CENTRO DE CIENCIAS DE BENASQUE
Jose M Muñoz Castañeda.
- 6** **Title of the work:** Geometrical aspects of quantum fields over bounded domains
Name of the conference: XIV Encuentro de invierno. Geometría mecánica y teoría de control
City of event: Zaragoza, Aragon, Spain
Date of event: 06/02/2012
End date: 07/02/2012
Organising entity: Universidad de Zaragoza **Type of entity:** University
- 7** **Title of the work:** Casimir effect and delta potential scattering
Name of the conference: What is Quantum Field Theory?
City of event: Benasque, Spain
Date of event: 14/09/2011
End date: 18/09/2011
Organising entity: FUNDACION CENTRO DE CIENCIAS DE BENASQUE
Jose M Muñoz Castañeda.
- 8** **Title of the work:** Boundary effects in quantum physics
Name of the conference: Folding and Unfolding: Interactions from Geometry. In honour of G. Marmo
City of event: Ischia, Italy
Date of event: 08/06/2011
End date: 12/06/2011
Organising entity: Naples university **Type of entity:** University
Manuel Asorey.



- 9** **Title of the work:** Some one-dimensional scattering problems (vaguely) related to the Casimir Effect
Name of the conference: Recent Advances in Time-Asymmetric Quantum Mechanics, Quantization and Related Topics. In honour of M. Gadella
City of event: Valladolid, Castile and León, Spain
Date of event: 14/07/2010
End date: 16/07/2010
Organising entity: Universidad de Valladolid **Type of entity:** University
Juan Mateos Guilarte.
- 10** **Title of the work:** Tritons in an Exotic Dark Universe
Name of the conference: HighEnergy@unizar.es: Past, Present and Future", organized by the High Energy Group of Zaragoza University to commemorate the 20th anniversary of the creation of the group
City of event: Zaragoza, Aragon, Spain
Date of event: 07/06/2009
End date: 12/06/2009
Organising entity: Universidad de Zaragoza **Type of entity:** University
City organizing entity: Zaragoza, Aragon, Spain
Manuel Asorey; David Garcia Alvarez.
- 11** **Title of the work:** Boundary conditions: The path integral approach
Name of the conference: Particles and Fields: Classical and Quantum". Celebrated in honor of E. C. G. Sudarshan
City of event: Jaca, Aragon, Spain
Date of event: 09/2006
End date: 09/2006
Organising entity: Universidad de Zaragoza **Type of entity:** University
City organizing entity: Zaragoza, Aragon, Spain
Manuel Asorey; Jesus Clemente Gallardo.
- 12** **Title of the work:** Vacuum Energy and Renormalization on the Edge
Name of the conference: 2nd International Conference on Quantum Theories and Renormalization Group in Gravity and Cosmology (IRGAC06)
City of event: Barcelona, Catalonia, Spain
Date of event: 11/07/2006
End date: 15/07/2006
Organising entity: Universitat de Barcelona **Type of entity:** University
City organizing entity: Barcelona, Catalonia, Spain
Manuel Asorey; Jose M Muñoz Castañeda.



R&D management and participation in scientific committees

Organization of R&D activities

- 1 Title of the activity:** MATHEMATICAL STRUCTURES IN QUANTUM SYSTEMS AND APPLICATIONS
(web: <http://benasque.org/2012msqs/>)
Type of activity: Scientific congress **Geographical area:** International
City of event: Benasque, Aragon, Spain
Convening entity: FUNDACION CENTRO DE CIENCIAS DE BENASQUE
City convening entity: Benasque, Aragon, Spain
Type of participation: Organiser
N° assistants: 45
Start-End date: 08/07/2012 - 14/07/2012 **Duration:** 6 days
- 2 Title of the activity:** What is quantum field theory? In honor of M. Asorey (web: <http://benasque.org/2011qft/>)
Type of activity: Scientific congress **Geographical area:** Internacional
City of event: Benasque, Aragon, Spain
Convening entity: FUNDACION CENTRO DE CIENCIAS DE BENASQUE
City convening entity: Benasque, Aragon, Spain
Type of participation: Organiser
N° assistants: 52
Start-End date: 14/09/2011 - 18/09/2011 **Duration:** 4 days

Evaluation and revision of R&D projects and articles

- 1 Performed tasks:** Refere International Journal of Applied and Computational Mathematics
Start date: 05/2015
- 2 Performed tasks:** Referee of Eur. Phys. J.: Eur. Phys. J. PLUS
Entity where activity was carried out: EPJ/Springer **Type of entity:** Associations and Groups
Start date: 20/10/2014
- 3 Performed tasks:** Referee of the APS. Journal: Phys.Rev.A
Entity where activity was carried out: APS **Type of entity:** Associations and Groups
City of entity: United States of America
Start date: 05/05/2014
- 4 Name of the activity:** Referee
Performed tasks: Referee of the APS. Journal: Phys.Rev.D
Entity where activity was carried out: APS
Start date: 2013

Other achievements

Stays in public or private R&D centres

- 1** **Entity:** Universidad de Valladolid **Type of entity:** University
Faculty, institute or centre: Facultad de Ciencias
City of entity: Valladolid, Spain
Start-End date: 07/07/2015 - 09/07/2015 **Duration:** 3 days
Goals of the stay: Invited speaker
Relevant results: Talk given: "Self adjoint extensions and heat kernel in quantum fields over bounded domains".
- 2** **Entity:** Universidad Carlos III de Madrid **Type of entity:** University
Faculty, institute or centre: Escuela Politécnica Superior
City of entity: Madrid, Spain
Start-End date: 01/06/2015 - 02/06/2015 **Duration:** 2 days
Goals of the stay: Invited speaker
Relevant results: Talk given: "Self adjoint extensions and heat kernel in quantum fields over bounded domains"
- 3** **Entity:** Universidad de Zaragoza **Type of entity:** University
Faculty, institute or centre: Facultad de Ciencias
City of entity: Zaragoza, Spain
Start-End date: 16/02/2015 - 23/02/2015 **Duration:** 2 days
Goals of the stay: Invited speaker
Relevant results: Talk given: "Quantum fields over bounded domains"
- 4** **Entity:** Universidad de Zaragoza **Type of entity:** University
Faculty, institute or centre: Facultad de Ciencias
City of entity: Zaragoza, Aragon, Spain
Primary (UNESCO code): 129900 - Other mathematical specialities; 221100 - Solid state physics; 221212 - Quantum field theory; 229001 - Theoretical Physics high-energy
Start-End date: 15/02/2015 - 23/02/2015 **Duration:** 8 days
Goals of the stay: Guest
Relevant results: Collaboration with the theoretical Physics department. Talk given: "Quantum fields in the presence of boundaries: solid state physics, extra dimensions and cosmology"
- 5** **Entity:** Universidad de Salamanca **Type of entity:** University
Faculty, institute or centre: Theoretical Physics department and IUFFyM
City of entity: Salamanca, Castile and León, Spain
Primary (UNESCO code): 221212 - Quantum field theory
Start-End date: 05/2012 - 05/2012 **Duration:** 10 days
Funding entity: Research grant spanish science foundation
Goals of the stay: Guest
Provable tasks: Scientific collaboration with prof. J Mateos Guilarte and J. L. Hernandez Pastora
Acquired skills developed: Understanding the relation between quantum boundary conditions and point interaction in quantum field theory and its applications to high energy physics and cosmology



- 6** **Entity:** Universidad de Zaragoza **Type of entity:** University
Faculty, institute or centre: Theoretical Physics department
City of entity: Zaragoza, Aragon, Spain
Primary (UNESCO code): 221212 - Quantum field theory
Secondary (UNESCO code): 221205 - Gravitation
Start-End date: 02/2012 - 03/2012 **Duration:** 15 days
Funding entity: Research grant of the spanish science foundation
Goals of the stay: Guest
Provable tasks: Scientific collaboration with prof. M. Asorey and I. Cavero-Peláez
Acquired skills developed: Quantum Field Theory, non-linear differential equations, and quantization singular classical backgrounds, geometry in quantum physics, Casimir effect, cosmology
- 7** **Entity:** Universidad de Salamanca **Type of entity:** University
Faculty, institute or centre: Theoretical Physics department and IUFFyM
City of entity: Salamanca, Castile and León, Spain
Primary (UNESCO code): 221212 - Quantum field theory
Start-End date: 02/2012 - 02/2012 **Duration:** 10 days
Funding entity: Research grant spanish science foundation
Goals of the stay: Guest
Provable tasks: Scientific collaboration with prof. J Mateos Guilarte and J. L. Hernandez Pastora
Acquired skills developed: Quantum boundary effects and self-adjoint extensions in high energy physics, cosmology and general relativity
- 8** **Entity:** Universidad de Salamanca **Type of entity:** University
Faculty, institute or centre: Theoretical Physics department and IUFFyM
City of entity: Salamanca, Castile and León, Spain
Primary (UNESCO code): 221212 - Quantum field theory
Start-End date: 12/2011 - 12/2011 **Duration:** 10 days
Funding entity: Research grant spanish science foundation
Goals of the stay: Guest
Provable tasks: Scientific collaboration with prof. J Mateos Guilarte and J. L. Hernandez Pastora
Acquired skills developed: Understanding the relation between quantum boundary conditions and point interaction in quantum field theory and its applications in cosmology
- 9** **Entity:** Universidad de Salamanca **Type of entity:** University
Faculty, institute or centre: Theoretical Physics department and IUFFyM
City of entity: Salamanca, Castile and León, Spain
Primary (UNESCO code): 221212 - Quantum field theory
Start-End date: 09/2011 - 09/2011 **Duration:** 15 days
Funding entity: Research grant spanish science foundation
Goals of the stay: Guest
Provable tasks: Scientific collaboration with prof. J Mateos Guilarte and J. L. Hernandez Pastora
Acquired skills developed: Understanding the relation between quantum boundary conditions and point interactions in quantum field theory and its application in cosmology
- 10** **Entity:** Universidad de Salamanca **Type of entity:** University
Faculty, institute or centre: Theoretical Physics department and IUFFyM
City of entity: Salamanca, Castile and León, Spain
Primary (UNESCO code): 221212 - Quantum field theory
Start-End date: 05/2011 - 05/2011 **Duration:** 15 days
Funding entity: Research grant spanish science foundation



Goals of the stay: Guest

Provable tasks: Scientific collaboration with prof. J Mateos Guilarte and J. L. Hernandez Pastora

Acquired skills developed: Quantum boundaries of co-dimension higher than one in quantum field theory and its applications to cosmology

- 11** **Entity:** University of Leipzig **Type of entity:** University
Faculty, institute or centre: Institut für Theoretische Physik
City of entity: Leipzig, Germany
Primary (UNESCO code): 221212 - Quantum field theory
Start-End date: 05/2010 - 08/2010 **Duration:** 3 months
Funding entity: DFG (German science foundation)
Goals of the stay: estancia breve de investigación
Provable tasks: DFG (german government) grant for starting scientifically collaborations (Dr. M. Bordag). We published a paper on the quantum vacuum interaction between 1D crystals.
Acquired skills developed: Learn the applications of the theory of quantum fields over bounded domains to the study of vacuum energy problems and the Casimir effect
- 12** **Entity:** Universität Leipzig **Type of entity:** University
Faculty, institute or centre: Institut für Theoretische Physik
City of entity: Leipzig, Germany
Primary (UNESCO code): 221212 - Quantum field theory
Start-End date: 10/01/2010 - 20/01/2010 **Duration:** 10 days
Funding entity: Leipzig Universität
Goals of the stay: Guest
Provable tasks: Talk: quantum fields in bounded domains. Invited by Dr. M. Bordag
Relevant results: I started a collaboration with Dr. M. Bordag that has last since then
- 13** **Entity:** Federico II Università di Napoli (Naples university)-INFN **Type of entity:** University
Faculty, institute or centre: Department of Physics
City of entity: Naples, Italy
Primary (UNESCO code): 221212 - Quantum field theory
Start-End date: 26/11/2009 - 12/12/2009 **Duration:** 16 days
Goals of the stay: Guest
Relevant results: Boundary Conditions in Quantum Mechanics, and Quantum Field Theory. Working and invited by prof. G. Marmo. Papers in preparation
- 14** **Entity:** Swansea University
Faculty, institute or centre: Department of Theoretical Physics
City of entity: Swansea, United Kingdom
Primary (UNESCO code): 221212 - Quantum field theory
Secondary (UNESCO code): 221205 - Gravitation
Start-End date: 10/2007 - 12/2007 **Duration:** 3 months
Funding entity: Science foundation of the spanish government
Name of programme: Estancia breve-programa FPU (spanish government)
Goals of the stay: Doctorate
Relevant results: Understanding the relation between AdS/CFT correspondence and the theory of quantum boundary conditions. Collaboration with prof. Carlos Nuñez



Obtained grants and scholarships

- 1** **Name of the grant:** Conference organization grant
Aims: organization of scientific events
Awarding entity: CASIMIR network-European Science foundation
Conferral date: 08/07/2012 **Duration:** 6 days
End date: 14/07/2012
- 2** **Name of the grant:** Short visit grant
Aims: starting a collaboration with M. Bordag
Awarding entity: CASIMIR network-European Science foundation **Type of entity:** European Union
Conferral date: 01/2010 **Duration:** 14 days
End date: 01/2010
Entity where activity was carried out: Leipzig University
- 3** **Name of the grant:** Beca predoctoral FPU (PhD fellowship)
Aims: Pre-doctoral
Awarding entity: Ministerio Educación y Ciencia **Type of entity:** Spanish government
Conferral date: 01/2005 **Duration:** 4 years
End date: 12/2008
Entity where activity was carried out: Universidad de Zaragoza
- 4** **Name of the grant:** Travel grant-Prospects in Theoretical Physics 2005 (PiTP05)
Aims: grant to cover travel and accommodation expenses. International competitive application
Awarding entity: Institute for Advanced Study-Princeton **Type of entity:** Research institute
Conferral date: 18/07/2005 **Duration:** 11 days
End date: 29/07/2005
Entity where activity was carried out: Institute of Advanced Study-Princeton
- 5** **Name of the grant:** Beca de colaboración (Scholarship for introduction to research)
Identify key words: Condensados de bose-einstein (bec) [eng]; Quantum optic
Aims: Introduction to research for last year degree students with best marks. Topic: solitons in Bose-Einstein condensates
Awarding entity: MINISTERIO DE EDUCACION Y CIENCIA (spanish science foundation)
Conferral date: 2003 **Duration:** 9 months
End date: 2004
Entity where activity was carried out: Universidad de Salamanca
Faculty, institute or centre: Optics department
- 6** **Name of the grant:** TRAVEL GRANT: SHORT RESEARCH VISIT OF PROF. M. ASOREY TO LEIPZIG
Aims: SHORT RESEARCH VISIT
Awarding entity: CASIMIR NETWORK-EUROPEAN SCIENCE FOUNDATION
Conferral date: 27/06/2012 **Duration:** 10 days



Other types of collaboration with researchers or technologists

- 1** **Type of relationship:** Participation in long term collaboration agreements between bodies
Description of the collaboration: Member of GRAPHENE FLAGSHIP (ERC)-Zaragoza node
Start date: 01/04/2015
Relevant results: This is the biggest research project in applied physics all over Europe
- 2** **Type of relationship:** several papers in preparation or submitted for publication
Name principal investigator (PI, Co-PI...): Klaus Kirsten
Description of the collaboration: Scientific collaboration with prof. Klaus Kirsten
Participating entity/entities:
Baylor University **Type of entity:** University
City participating entity: United States of America
Start date: 2012
- 3** **Type of relationship:** several papers in preparation or submitted for publication
Name principal investigator (PI, Co-PI...): Dimitri Vassilevich
Description of the collaboration: Scientific collaboration with prof. D. Vassilevich
Participating entity/entities:
ABC University
City participating entity: Sao Paulo, Brazil
Start date: 2011
- 4** **Type of relationship:** Collaboration
Name principal investigator (PI, Co-PI...): Giuseppe Marmo
Description of the collaboration: Scientific collaboration with prof. G. Marmo.
Participating entity/entities:
Naples University
Start date: 2006
Relevant results: Several long term project in preparation. Geometrical aspects of quantum physics and the theory of selfadjoint extension

Summary of other achievements

- 1** **Description of the achievement:** Attendance to Scientific event: "III Workshop on Cosmology and the Quantum Vacuum"
Accrediting entity: FUNDACION CENTRO DE CIENCIAS DE BENASQUE
Conferral date: 09/2016
- 2** **Description of the achievement:** ACREDITACIÓN PROFESOR AYUDANTE DOCTOR (License for junior assistant professor positions in spanish universities)
Accrediting entity: National Agency for Quality Evaluation (ANECA)
Conferral date: 07/2014



- 3** **Description of the achievement:** ACREDITACIÓN PROFESOR CONTRATADO DOCTOR (Qualification for assistant professor positions in spanish universities)
Accrediting entity: National Agency for Quality Evaluation (ANECA) **Type of entity:** State agency
City accrediting entity: Spain
Conferral date: 07/2014
- 4** **Description of the achievement:** ACREDITACIÓN PROFESOR DE UNIVERSIDAD PRIVADA (License for professor positions in spanish private universities)
Accrediting entity: National Agency for Quality Evaluation (ANECA)
Conferral date: 07/2014
- 5** **Description of the achievement:** Conference attendance: 34th PIERS 2013
Accrediting entity: PIERS organizing committee.
City accrediting entity: Stockholm, Sweden
Conferral date: 2013
- 6** **Description of the achievement:** Scientific event attendance: "International School QED2012"
Accrediting entity: CNRS-France
City accrediting entity: Cargese, France
Conferral date: 2012
- 7** **Description of the achievement:** Conference attendance: QUANTUM FIELD THEORY UNDER THE INFLUENCE OF EXTERNAL CONDITIONS (QFEXT) 2011
Accrediting entity: FUNDACION CENTRO DE CIENCIAS DE BENASQUE
City accrediting entity: Benasque, Spain
Conferral date: 2011
- 8** **Description of the achievement:** Attendance scientific event: "Strings007"
Accrediting entity: FUNDACION CENTRO DE CIENCIAS DE BENASQUE
City accrediting entity: Benasque, Spain
Conferral date: 2007
- 9** **Description of the achievement:** Attendance (school): "Taller de Altas energías 2005 (TAE2005)" (school on high energy physics)
Accrediting entity: FUNDACION CENTRO DE CIENCIAS DE BENASQUE
City accrediting entity: benasque, Spain
Conferral date: 2005
- 10** **Description of the achievement:** Attendance with grant (school): "Prospects in Theoretical Physics 2005 (PiTP05)". Summer school for PhD students and postdocs.
Accrediting entity: Princeton Institute of Advanced Study
City accrediting entity: Princeton, United States of America
Conferral date: 2005
- 11** **Description of the achievement:** Attendance to scientific event with fellowship: "Fronteras de la Física 2004" (Frontiers in Physics 2004). Summer school for undergraduate students all over Spain.
Accrediting entity: FUNDACION CENTRO DE CIENCIAS DE BENASQUE
City accrediting entity: Benasque, Spain
Conferral date: 2004