CURRICULUM VITAE ABREVIADO (CVA)

Fecha del CVA	01-11-2025

Parte A. DATOS PERSONALES

Nombre y apellidos	Manuel DONAIRE DEL YERRO		
Open Researcher and Contributor ID (ORCID) (*)		Researcher ID	D-9055-2018
		ORCID code	0000-0001-5082-9616

A.1. Situación profesional actual

Institución	Universidad de Valladolid		
Departamento	Departamento de Física Teórica, Atómica y Óptica		
Dirección	Paseo de Belén, 7, E-47011 Valladolid (Spain)		
Teléfono		E-mail	
Puesto actual	Profesor Titular de Universidad	desde	2024
Códigos UNESCO	221212 Teoría Cuántica de Campos, 220703 Física Atómica, 220807 Partículas Elementales		
Palabras clave	Óptica Cuántica, Teoría Cuántica de Campos, Partículas Elementales		

A.2. Situación profesional anterior

Periodo	Puesto/Institución/País
1999-2000 (12 meses)	Master student, Instituto de Física Teórica IFT-UAM-CSIC, España
2000-2001 (9 meses)	Teaching Assistant, The University of Texas at Austin, USA
2002-2006 (48 meses)	PhD student, University of Cambridge, DAMTP, RU
2007-2009 (24 months)	Postdoc, Depto. de Física de la Materia Condensada, UAM, España
2009-2011 (24 meses)	Postdoc, Centro de Física do Porto, Portugal
2012-2013 (12 meses)	Chercheur associé, Laboratoire de Physique et Modélisation des Milieux Condensés, LPMMC-CNRS, Francia
2013-2016 (30 meses)	Chercheur associé, Laboratoire Kastler-Brossel LKB-ENS, Francia

A.3. Formación Académica

Grado	Universidad	Año
PhD in Theoretical Physics and Applied Mathematics	The University of Cambridge	2007
Master of Advanced Study in Mathematics (Part III)	The University of Cambridge	2002
Certificado de Estudios Avanzados de Física Teórica	Universidad Autónoma de Madrid (UAM)	2000
Licenciatura en C.C. Físicas	Universidad Autónoma de Madrid (UAM)	1999

Part B. LISTADO DE APORTACIONES MÁS RELEVANTES EN INVESTIGACIÓN

Acreditación I3 y tres sexenios reconocidos por ANECA

B.1. Publicaciones *(hasta 10)*

Resumen: Número de artículos en JCR: 32, de los cuales 22 son Q1, 5 son Q2 y 3 son Q3. Esto es, 2 Phys. Rev. Lett., 1 Eur. Phys. Lett., 1 New. J. Phys., 1 Phys. Rev. D, 2 JHEP, 14 Phys. Rev. A, 1 J. Phys.: Condensed Matter, 1 J. Phys. A, 1 Int. J. Mod. Phys., 1 Eur. Phys. J. D, 1 SPIE, 1 Symmetry-MDPI, 1 Phys. Rev. E, 1 Eur. Phys. J. C, 1 IEEE, y 1 J. Phys. Chem. Lett., y un capítulo de libro en la Roy. Sec. Chem.

[1] 'Nonconservative dipole forces on an excited two-atom system', J. Sánchez-Cánovas and M. Donaire, Physical Review A **106**, 032805 (2022); ISSN 1050-2947, DOI: 10.1103/PhysRevA.106.032805.

[2] **'**Acceleration of an unpolarized proton along a uniform magnetic field: Casimir momentum of leptons', M. Donaire, JHEP **10** (2019) 041 (2019); ISSN 1029-8479, DOI: 10.1007/JHEP10(2019)041.

[3] **'**Net force on an asymmetrically excited system from vacuum fluctuations', M. Donaire, Physical Review A **94**, 062701 (2016); ISSN 1050-2947, DOI: 10.1103/PhysRevA.93.052706.

[4] 'Two-atom interaction energies with one atom in an excited state: van der Waals potentials versus level shifts', M. Donaire, Physical Review A **93**, 052706 (2016); ISSN 1050-2947, DOI: 10.1103/PhysRevA.93.052706.

[5] **'**Quasiresonant van der Waals interaction between nonidentical atoms', M. Donaire, R. Guérout and A. Lambrecht, Physical Review Letters **115**, 033201(2015); ISSN 0031-9007, DOI: 10.1103/PhysRevLett.115.033201.

[6] **'**Casimir Momentum of a Chiral Molecule in a Magnetic Field', M. Donaire, B. van-Tiggelen and G. Rikken, Physical Review Letters **111**, 14602 (2013); ISSN 0031-9007, DOI: 10.1103/PhysRevLett. 111.143602.

[7] **'**Electromagnetic vacuum of complex media II. Lamb shift and total vacuum energy', M. Donaire, Phys. Rev. A **85**, 052518 (2012); ISSN 1050-2947, DOI: 10.1103/PhysRevA.85.052518.

[8] 'Electromagnetic vacuum of complex media: Dipole emission vs. light propagation, vacuum energy, and local field factors', M. Donaire, Phys. Rev. A **83**, 022502 (2011); ISSN 1050-2947, DOI: 10.1103/PhysRevA.83.022502.

[9] 'Spontaneous vortex formation on a superconducting film', M. Donaire, T.W.B. Kibble and A. Rajantie, New J. Phys. **9**, 148 (2007), chosen in "IOP Select"; ISSN 1367-2630, DOI: 10.1088/1367-2630/9/5/148.

[10] 'Heavy cosmic strings', M. Donaire and A. Rajantie, Phys. Rev. D **73**, 063517 (2006); ISSN 2470-0010, DOI: 10.1103/PhysRevD.73.063517.

B.2. Congresos *(más relevantes)*

. 2018 'The vacuum momentum of chiral molecules and protons in a magnetic field', 48th Winter Colloquium on the Physics of Quantum Electronics, PQE 2018, Snowbird, Utah, USA (invited talk).

. 2016 'Violation of the action-reaction principle in two-atom interactions', Conference on Precision Physics of Simple Atomic Systems PSAS2016, Jerusalem, Israel (invited talk).

. 2015 'Casimir-Polder induced Rabi oscillations and the effect of vacuum fluctuations on driven atoms', Progress in Electromagnetics Research Symposium 2015 (PIERS2015), Prague (invited talk).

. 2013 'Casimir momentum of a chiral molecule in a magnetic field', Workshop on Quantum Vacuum and Gravitation, Toulouse (invited talk).

. 2013 'Casimir momentum of a chiral molecule in a magnetic field', PIERS2013, Stockholm (invited talk).

. 2005 'Formation of strings from a first order phase transition' 'COSLAB05', Smolenice, Slovakia (invited talk).

B.3. Proyectos de investigación *(más relevantes)*

1. Title: Superconducting Qubits.
. Affiliation: Institut Néel, CNRS.
. Funding body and reference no.: Ministerio de Universidades – NextGeneration EU-funds

(Spain), Programa de Recualificación del Profesorado Universitario.
. P.I.: Dr. Manuel Donaire, Dr. Andrés Cano
. Project duration and budget: 2023-2024, 35.000 euro.
. Participation: Development and execution of project.

2. Title: Mathematical modelisation in quantum technologies and nanomaterials.
. Affiliation: Departamento de Física Teórica, Atómica y Óptica, Universidad de Valladolid.
. Funding body and reference no.: JCyL, BU229P18.
. P.I.: Prof. Ángel Ballesteros.
. Project duration and budget: 2018-2021, 120.000 euro.
. Participation: Development and execution of project.

3. Title: New challenges in supersymmetric and superintegrable systems.
. Affiliation: Departamento de Física Teórica, Atómica y Óptica, Universidad de Valladolid.
. Funding body and reference no.: MINECO, MTM2014-57129-C2-1-P.
. P.I.: Profs. Luis Miguel Nieto and Javier Negro.
. Project duration and budget: 2015-2018, 103.000 euro.
. Participation: Execution of project.

4. Title: ForCaG, *Forces de Casimir et gravitation à courte distance*.
. Affiliation: Université Pierre et Marie Curie, École Normal Supérieure, Collège de France.
. Funding body and reference no.: *Agence Nationale de la Recherche*, France, ANR-13-BS04–0003-02.
. P.I.: Prof. Astrid Lambrecht and Dr. Frank Pereira.
. Contract duration and budget: 2013-2016, 300.000 euro.
. Participation: *Chercheur associé*.

5. Title: PHOTONIMPULS, *Impulsion Photonique*.
. Affiliation: Université Joseph Fourier, Grenoble; LNCMI, LPPMMC, CNRS Rhon-Alpes.
. Funding body and reference no.: *Agence Nationale de la Recherche*, France, ANR-09-BLAN–0088.
. P.I.: Prof. Bart van Tiggelen and Prof. Geert Rikken.
. Contract duration and budget: 2009-2013, 275.000 euro.
. Participation: *Chercheur associé*.

6. Title: Consolider NANOLIGHT, Light Control on the Nanoscale.
. Affiliation: Universidad Autónoma de Madrid.
. Funding body and reference no.: MICINN, *Programa Consolider*, CSD2007-00046-MICINN.
. P.I.: Prof. Juan J. Sáenz.
. Project duration and budget: 2007-2012, 242.000 euro.
. Participation: Execution of project.

7. Title: NanoMagMa, Nanostructured active Magnetoplasmonic Materials.
. Affiliation: Universidad Autónoma de Madrid.
. Funding body and reference no.: FP7 Europan Commission, NMP3-2008-214107.
. P.I.: Prof. Juan J. Sáenz and Dr. Antonio García Martín.
. Project duration and budget: 2008-2011, 144.600 euro.
. Participation: Execution of project.

B.4. Transferencia de tecnología y explotación de resultados

Patentes,

. FR2105909 *Procédé et dispositif de caractérisation de propriétés magnéto-chirales d'un échantillon par spectroscopie de résonance paramagnétique électronique*, Geert Rikken and Manuel Donaire (2021) – CNRS-France.

. PCT/EP2024/068002 *Superconducting qubit devices and methods for fabricating superconducting qubit devices,* Andrés Cano and Manuel Donaire (2024) – CNRS-France.