



## **Carlos Sabín**

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## 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.

H-index (Google Scholar): 26. Número de citas (Google Scholar): 2533. Más de 60 artículos publicados en revistas internacionales con revisión por pares. Más de 30 congresos internacionales.



## Carlos Sabín

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 Name: **Carlos**  
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 ResearcherID: **J-2690-2013**  
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### Current professional situation

**Employing entity:** Universidad Autónoma de Madrid      **Type of entity:** University  
**Department:** Departamento Física Teórica  
**Professional category:** Investigador Ramón y Cajal  
**Start date:** 01/09/2021

### Previous positions and activities

	Employing entity	Professional category	Start date
1	INSTITUTO DE FISICA FUNDAMENTAL	Investigador Junior Leader "la Caixa"	01/09/2018
2	Consejo Superior de Investigaciones Científicas	Investigador ComFuturo	01/09/2015
3	University of Nottingham	Assistant Professor	01/02/2015
4	University of Nottingham	Postdoctoral Researcher	18/06/2012

- Employing entity:** INSTITUTO DE FISICA FUNDAMENTAL      **Type of entity:** State agency  
**Professional category:** Investigador Junior Leader "la Caixa"  
**Start-End date:** 01/09/2018 - 31/08/2021      **Duration:** 3 years
- Employing entity:** Consejo Superior de Investigaciones Científicas      **Type of entity:** State agency  
**Department:** INSTITUTO DE FISICA FUNDAMENTAL  
**Professional category:** Investigador ComFuturo  
**Start-End date:** 01/09/2015 - 31/08/2018      **Duration:** 3 years
- Employing entity:** University of Nottingham      **Type of entity:** University  
**Professional category:** Assistant Professor  
**Start-End date:** 01/02/2015 - 31/08/2015



**4** **Employing entity:** University of Nottingham **Type of entity:** University  
**Professional category:** Postdoctoral Researcher  
**Start-End date:** 18/06/2012 - 31/01/2015 **Duration:** 2 years - 7 months



## Education

### University education

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

**1** University degree: Master

**Name of qualification:** Master en Física Fundamental

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

**Date of qualification:** 30/06/2007

**2** University degree: Higher degree

**Name of qualification:** Licenciado en Física Opción Física Fundamental

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

**Date of qualification:** 15/09/2006

#### Doctorates

**Doctorate programme:** Doctor en Física

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

**Date of degree:** 22/11/2011

### Language skills

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

## Teaching experience

### General teaching experience

**1** Name of the course: Métodos Matemáticos II

**University degree:** Grado en Física

**Frequency of the activity:** 2

**Start date:** 01/09/2022

**End date:** 01/06/2024

**Entity:** Universidad Autónoma de Madrid

**Type of entity:** University

**Faculty, institute or centre:** Facultad de Ciencias

- 2** **Name of the course:** Laboratorio de Física  
**University degree:** Grado en Bioquímica  
**Frequency of the activity:** 3  
**Start date:** 16/11/2021  
**Type of hours/ ECTS credits:** Credits  
**Hours/ECTS credits:** 16  
**Entity:** Universidad Autónoma de Madrid  
**Faculty, institute or centre:** Facultad de Ciencias
- End date:** 20/11/2023  
**Type of entity:** University
- 3** **Name of the course:** Técnicas Experimentales I  
**University degree:** Grado en Física  
**Start date:** 17/11/2021  
**Type of hours/ ECTS credits:** Credits  
**Hours/ECTS credits:** 64  
**Entity:** Universidad Autónoma de Madrid  
**Faculty, institute or centre:** Facultad de Ciencias
- End date:** 27/05/2022  
**Type of entity:** University
- 4** **Type of teaching:** Official teaching  
**Name of the course:** Fundamentos de Física III  
**Type of programme:** Bachelor's degree  
**Type of subject:** Obligatory  
**University degree:** Grado en Física  
**Course given:** 1  
**Start date:** 08/02/2017  
**Type of hours/ ECTS credits:** Hours  
**Hours/ECTS credits:** 14  
**Entity:** Universidad Autónoma de Madrid  
**Faculty, institute or centre:** Facultad de Ciencias  
**Department:** Física Teórica  
**Subject language:** Spanish
- Type of teaching:** Practical work (classroom-problems)  
**Frequency of the activity:** 3  
**End date:** 17/05/2019  
**Type of entity:** University
- 5** **Type of teaching:** Official teaching  
**Name of the course:** Mecánica y Ondas I  
**Type of programme:** Bachelor's degree  
**Type of subject:** Obligatory  
**University degree:** Grado en Física  
**Course given:** 2  
**Start date:** 10/2016  
**Type of hours/ ECTS credits:** Hours  
**Hours/ECTS credits:** 20  
**Entity:** Universidad Autónoma de Madrid  
**Faculty, institute or centre:** Facultad de Ciencias  
**Department:** Física Teórica  
**Subject language:** Spanish
- Type of teaching:** Practical work (classroom-problems)  
**Frequency of the activity:** 3  
**End date:** 01/2019  
**Type of entity:** University
- 6** **Name of the course:** Calculus  
**University degree:** Mathematics  
**Start date:** 02/2015  
**Entity:** University of Nottingham  
**Faculty, institute or centre:** School of Mathematical Sciences
- End date:** 06/2015  
**Type of entity:** University



- 7** **Name of the course:** Linear Mathematics  
**University degree:** Mathematics  
**Start date:** 02/2015 **End date:** 06/2015  
**Entity:** University of Nottingham **Type of entity:** University  
**Faculty, institute or centre:** School of Mathematical Sciences
- 8** **Name of the course:** Quantum Field Theory  
**University degree:** MSc Gravity, particles and fields  
**Start date:** 02/2015 **End date:** 06/2015  
**Entity:** University of Nottingham **Type of entity:** University  
**Faculty, institute or centre:** School of Mathematical Sciences

### Experience supervising doctoral thesis and/or final year projects

- 1** **Project title:** Ordenadores cuánticos en línea  
**Type of project:** Bachelor's Thesis  
**Entity:** Universidad Autónoma de Madrid **Type of entity:** University  
**Student:** Alejandro Mata Román  
**Date of reading:** 30/05/2024
- 2** **Project title:** Simulación cuántica de espacio-tiempo curvo  
**Type of project:** Bachelor's Thesis  
**Entity:** Universidad Autónoma de Madrid **Type of entity:** University  
**Student:** Marco Díaz Maceda  
**Date of reading:** 30/05/2024
- 3** **Project title:** Ordenadores cuánticos en línea  
**Type of project:** Bachelor's Thesis  
**Entity:** Universidad Autónoma de Madrid  
**Student:** Patricia Gómez de Enterría  
**Date of reading:** 22/06/2023
- 4** **Project title:** Simulación cuántica digital de campos cuánticos en los ordenadores cuánticos de IBM  
**Type of project:** Master's Thesis  
**Entity:** Universidad Autónoma de Madrid **Type of entity:** University  
**Student:** Pablo Guillermo Carmona Rufo  
**Date of reading:** 22/06/2023
- 5** **Project title:** Entanglement generation and relativistic simulation with cQED parametric oscillators  
**Type of project:** Doctoral thesis  
**Entity:** Universidad Complutense de Madrid **Type of entity:** University  
**Student:** Andrés Agustí Casado  
**Obtained qualification:** Sobresaliente cum laude  
**Date of reading:** 12/07/2022
- 6** **Project title:** Simulación cuántica de teoría cuántica de campos en espaciotiempo curvo  
**Type of project:** Master's Thesis  
**Entity:** Universidad Complutense de Madrid **Type of entity:** University  
**Student:** Adrián Terrones Aragón  
**Date of reading:** 20/09/2021



- 7** **Project title:** Detección cuántica de espacio-tiempos curvos (Trabajo Fin de Máster)  
**Type of project:** Master's Thesis  
**Entity:** Universidad Complutense de Madrid **Type of entity:** University  
**Student:** Carlos Sanchidrián Vaca  
**Date of reading:** 12/09/2018
- 8** **Project title:** Efectos Unruh y Casimir dinámicos para tecnologías cuánticas superconductoras (Trabajo Fin de Máster)  
**Type of project:** Master's Thesis  
**Entity:** Universidad Complutense de Madrid **Type of entity:** University  
**Student:** Andrés Agustí Casado  
**Date of reading:** 12/09/2018
- 9** **Project title:** Simulación Cuántica de teoría cuántica de campos en espacio-tiempo curvo (Trabajo Fin de Máster)  
**Type of project:** Master's Thesis  
**Entity:** Universidad Complutense de Madrid **Type of entity:** University  
**Student:** Gonzalo Martín Vázquez  
**Date of reading:** 12/09/2018
- 10** **Project title:** Simulación cuántica de la ecuación de Dirac en espaciotiempos exóticos (Trabajo Fin de Máster)  
**Type of project:** Master's Thesis  
**Entity:** Universidad Complutense de Madrid **Type of entity:** University  
**Student:** Javier Faba García  
**Date of reading:** 12/09/2018
- 11** **Project title:** Simulación cuántica de transformaciones de coordenadas (Trabajo Fin de Máster)  
**Type of project:** Master's Thesis  
**Entity:** Universidad Complutense de Madrid **Type of entity:** University  
**Student:** Javier Almorox  
**Date of reading:** 05/07/2018
- 12** **Project title:** Dynamical Casimir Effect for quantum technology (Trabajo fin de master)  
**Type of project:** Master's Thesis  
**Entity:** Universidad Complutense de Madrid **Type of entity:** University  
**Student:** Antonio Villalpando Barroso  
**Date of reading:** 09/2017
- 13** **Project title:** Quantum simulation of wormhole spacetimes in Bose-Einstein condensates (Trabajo Fin de Máster)  
**Type of project:** Master's Thesis  
**Entity:** Universidad Complutense de Madrid **Type of entity:** University  
**Student:** Jesús Mateos Maroto  
**Date of reading:** 06/2017
- 14** **Project title:** Correlaciones cuánticas en el efecto Casimir dinámico (Trabajo Fin de Master)  
**Type of project:** Master's Thesis  
**Entity:** Universidad Complutense de Madrid **Type of entity:** University  
**Student:** Nadir Samos Saenz de Buruaga  
**Date of reading:** 15/09/2016



- 15 Project title:** Cavity entanglement in non-inertial frames  
**Type of project:** Master Thesis  
**Co-director of thesis:** Ivette Fuentes  
**Entity:** School of Mathematical Sciences, University of Nottingham  
**Type of entity:** University  
**Student:** Bartosz Regula  
**Date of reading:** 01/06/2015

## 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:** Quantum Gravitational Entanglement  
**Entity where project took place:** Universidad Autónoma de Madrid  
**Type of entity:** University  
**Name principal investigator (PI, Co-PI....):** Carlos Sabín  
**Nº of researchers:** 1  
**Funding entity or bodies:** Agencia Estatal de Investigación  
**Type of entity:** State agency  
**Name of the programme:** Consolidación Investigadora 2024  
**Code according to the funding entity:** CNS2024-154149  
**Start-End date:** 01/04/2025 - 31/03/2027  
**Total amount:** 24.442 €
- 2 Name of the project:** Quantum Computing with Microwave Photons  
**Entity where project took place:** INSTITUTO DE FISICA FUNDAMENTAL  
**Type of entity:** State agency  
**Name principal investigator (PI, Co-PI....):** Carlos Sabín  
**Nº of researchers:** 2  
**Funding entity or bodies:** Obra Social Fundación la Caixa  
**Type of entity:** Foundation  
**City funding entity:** Barcelona, Catalonia, Spain  
**Start-End date:** 01/09/2018 - 31/08/2021  
**Total amount:** 286.700 €
- 3 Name of the project:** Tecnologías cuánticas con qubits y campos  
**Entity where project took place:** INSTITUTO DE FISICA FUNDAMENTAL  
**Type of entity:** State agency  
**City of entity:** Madrid, Community of Madrid, Spain  
**Name principal investigator (PI, Co-PI....):** Juan José García Ripoll  
**Funding entity or bodies:** MINECO  
**Start-End date:** 01/01/2016 - 31/12/2018  
**Total amount:** 101.882 €



- 4** **Name of the project:** Tecnologías cuánticas 3.0  
**Entity where project took place:** INSTITUTO DE FISICA FUNDAMENTAL **Type of entity:** State agency  
**Name principal investigator (PI, Co-PI....):** Carlos Sabín  
**N° of researchers:** 1  
**Funding entity or bodies:** FUNDACION GENERAL CSIC  
**City funding entity:** Spain  
**Start-End date:** 01/09/2015 - 01/09/2018  
**Total amount:** 150.000 €
- 5** **Name of the project:** Levitation based quantum gravimeter  
**Entity where project took place:** University of Nottingham  
**City of entity:** Nottingham, United Kingdom  
**Name principal investigator (PI, Co-PI....):** Ivette Fuentes  
**N° of researchers:** 6  
**Funding entity or bodies:** EPSRC **Type of entity:** State agency  
**City funding entity:** United Kingdom  
**Start-End date:** 01/07/2014 - 31/12/2015
- 6** **Name of the project:** Quantum Fields and General Relativity in Quantum Information: Foundations and implementations  
**Name principal investigator (PI, Co-PI....):** Juan León  
**Start-End date:** 01/01/2012 - 31/12/2014
- 7** **Name of the project:** Quantum Information and technologies in Madrid, QUITEMAD  
**Entity where project took place:** INSTITUTO DE FISICA FUNDAMENTAL **Type of entity:** State agency  
**Name principal investigator (PI, Co-PI....):** Miguel Ángel Martín Delgado; Juan León  
**Funding entity or bodies:** Comunidad Autónoma de Madrid  
**Start-End date:** 01/01/2010 - 31/12/2013
- 8** **Name of the project:** Relativistic quantum thermometry with a Bose-Einstein condensate  
**Entity where project took place:** University of Nottingham **Type of entity:** University  
**City of entity:** Nottingham, United Kingdom  
**Name principal investigator (PI, Co-PI....):** Ivette Fuentes; Lucia Hckermuller  
**N° of researchers:** 4  
**Start-End date:** 01/10/2012 - 01/04/2013
- 9** **Name of the project:** Entanglement: foundations and protocols in quantum information  
**Entity where project took place:** INSTITUTO DE FISICA FUNDAMENTAL **Type of entity:** State agency  
**Name principal investigator (PI, Co-PI....):** Juan León  
**Start-End date:** 01/01/2009 - 31/12/2011



- 10 Name of the project:** Many-body quantum technologies  
**Name principal investigator (PI, Co-PI....):** Esperanza López; Gemán Sierra  
**Nº of researchers:** 5  
**Start date:** 01/09/2022

## Scientific and technological activities

### Scientific production

#### Publications, scientific and technical documents

- 1** Marco D Maceda; Carlos Sabín. Analogue simulation of quantum gravity black hole models in a dc-SQUID array. *Scientific Reports*. 15, pp. 20626. Nature Publishing Group UK, 01/07/2025.  
**DOI:** 10.1038/s41598-025-07349-z  
**Type of production:** Scientific paper **Format:** Journal  
**Total no. authors:** 2
- 2** Pablo Guillermo Carmona Rufo; Ayush Kumar; Carlos Sabín; Anupam Mazumdar. Entanglement witnesses mediated via axionlike particles. *Physical Review D*. 111, pp. 115005. American Physical Society, 06/06/2025.  
**DOI:** 10.1103/14tm-ddnv  
**Type of production:** Scientific paper **Format:** Journal  
**Total no. authors:** 4
- 3** Pablo Guillermo Carmona Rufo; Anupam Mazumdar; Carlos Sabín. Genuine tripartite entanglement in graviton-matter interactions. *Physical Review A*. 111, pp. 022444. American Physical Society, 26/02/2025.  
**DOI:** 10.1103/PhysRevA.111.022444  
**Type of production:** Scientific paper **Format:** Journal  
**Total no. authors:** 3
- 4** Marco D Maceda; Carlos Sabín. Digital quantum simulation of cosmological particle creation with IBM quantum computers. *Scientific Reports*. 15, pp. 3476. Nature Publishing Group UK, 28/01/2025.  
**DOI:** 10.1038/s41598-025-87015-6  
**Type of production:** Scientific paper **Format:** Journal  
**Total no. authors:** 2
- 5** Pablo Guillermo Carmona Rufo; Anupam Mazumdar; Sougato Bose; Carlos Sabín. Digital quantum simulation of gravitational optomechanics with IBM quantum computers. *EPJ Quantum Technology*. 11 - 31, Springer Nature, 24/04/2024. ISSN 2196-0763  
**DOI:** 10.1140/epjqt/s40507-024-00242-0  
**Type of production:** Scientific paper **Format:** Journal  
**Impact source:** JCR **Category:** Science Edition - PHYSICS, ATOMIC, MOLECULAR & CHEMICAL  
**Impact index in year of publication:** 5,8 **Journal in the top 25%:** Yes  
**Position of publication:** 4 **No. of journals in the cat.:** 40
- 6** Carlos Sabín. Digital quantum simulation of quantum gravitational entanglement with IBM quantum computers. *EPJ Quantum Technology*. 10, pp. 4. Springer Nature, 08/02/2023. ISSN 2196-0763  
**DOI:** 10.1140/epjqt/s40507-023-00161-6



**Type of production:** Scientific paper

**Impact source:** JCR

**Impact index in year of publication:**

**Position of publication:** 4

**Format:** Journal

**Category:** Science Edition - PHYSICS, ATOMIC, MOLECULAR & CHEMICAL

**Journal in the top 25%:** Yes

**No. of journals in the cat.:** 4

- 7** Carlos Sabin. Analogue non-causal null curves and chronology protection in a dc-SQUID array. Universe. 8, pp. 452. MDPI, 29/08/2022. ISSN 2218-1997

**DOI:** 10.3390/universe8090452

**Type of production:** Scientific paper

**Format:** Journal

**Impact source:** JCR

**Impact index in year of publication:** 2,813

- 8** Carlos Sabín. Causality in a Qubit-Based Implementation of a Quantum Switch. Universe. 8, pp. 269. MDPI, 04/05/2022. Available on-line at: <<https://www.mdpi.com/2218-1997/8/5/269>>. ISSN 2218-1997

**DOI:** 10.3390/universe8050269

**Type of production:** Scientific paper

**Format:** Journal

**Impact source:** JCR

**Impact index in year of publication:** 2,813

- 9** Andrés Agustí Casado; Carlos Sabín. Non-Gaussian entanglement swapping between three-mode spontaneous parametric down-conversion and three qubits. Physical Review A. 105, pp. 022401. American Physical Society, 03/02/2022. Available on-line at: <<https://journals.aps.org/pr/abstract/10.1103/PhysRevA.105.022401>>. ISSN 2469-9926

**DOI:** 10.1103/PhysRevA.105.022401

**Type of production:** Scientific paper

**Format:** Journal

**Impact source:** JCR

**Impact index in year of publication:** 2,971

- 10** Adrián Terrones; Carlos Sabín. Towards Quantum Simulation of Black Holes in a dc-SQUID Array. Universe. 7, pp. 499. MDPI, 15/12/2021. Available on-line at: <<https://www.mdpi.com/2218-1997/7/12/499>>. ISSN 2218-1997

**DOI:** 10.3390/universe7120499

**Type of production:** Scientific paper

**Format:** Journal

**Impact source:** JCR

**Category:** Astronomy and Astrophysics

**Impact index in year of publication:** 2,813

- 11** Paula Cordero Encinar; Andrés Agustí; Carlos Sabín. Digital quantum simulation of beam splitters and squeezing with IBM quantum computers. Physical Review A. 104, pp. 052609. (United States of America): American Physical Society, 18/11/2021. Available on-line at: <<https://journals.aps.org/pr/abstract/10.1103/PhysRevA.104.052609>>. ISSN 2469-9926

**DOI:** <https://doi.org/10.1103/PhysRevA.104.052609>

**Type of production:** Scientific paper

**Format:** Journal

**Impact source:** WOS (JCR)

**Category:** Science Edition - PHYSICS, ATOMIC, MOLECULAR & CHEMICAL

**Impact index in year of publication:** 3,140

**Position of publication:** 10

**No. of journals in the cat.:** 37



- 12** Andrés Agustí; Laura García Álvarez; Enrique Solano; Carlos Sabín. Qubit motion as a microscopic model for the Dynamical Casimir effect. *Physical Review A*. 103, pp. 062201. (United States of America): American Physical Society, 01/06/2021. Available on-line at: <<https://journals.aps.org/pr/abstract/10.1103/PhysRevA.103.062201>>. ISSN 2469-9926  
**DOI:** <https://doi.org/10.1103/PhysRevA.103.062201>  
**Type of production:** Scientific paper  
**Impact source:** WOS (JCR)  
**Impact index in year of publication:** 3,140  
**Position of publication:** 10  
**Format:** Journal  
**Category:** Science Edition - PHYSICS, ATOMIC, MOLECULAR & CHEMICAL  
**No. of journals in the cat.:** 37
- 13** Carlos Sabín. Entangling superconducting qubits through an analogue wormhole. *Universe*. 6, pp. 149. Multidisciplinary Digital Publishing Institute, 09/09/2020. ISSN 2218-1997  
**DOI:** [10.3390/universe6090149](https://doi.org/10.3390/universe6090149)  
**Type of production:** Scientific paper  
**Format:** Journal
- 14** Andrés Agustí; C. W. Sandbo Chang; Fernando Quijandría; Göran Johansson; Christopher M. Wilson; Carlos Sabín. Tripartite genuine non-Gaussian entanglement in three-mode spontaneous parametric downconversion. *Physical Review Letters*. 125, pp. 020502. American Physical Society, 08/07/2020. ISSN 1079-7114  
**Type of production:** Scientific paper  
**Impact source:** WOS (JCR)  
**Impact index in year of publication:** 9,227  
**Position of publication:** 6  
**Source of citations:** Google Scholar  
**Format:** Journal  
**Category:** Science Edition - PHYSICS, MULTIDISCIPLINARY  
**Journal in the top 25%:** Yes  
**No. of journals in the cat.:** 81  
**Citations:** 40
- 15** Carlos Sabín. Digital Quantum Simulation of Linear and Nonlinear Optical Elements. *Quantum Reports*. 2, pp. 208. MDPI, 04/03/2020. Available on-line at: <<https://www.mdpi.com/2624-960X/2/1/13>>. ISSN 2624-960X  
**DOI:** [10.3390/quantum2010013](https://doi.org/10.3390/quantum2010013)  
**Type of production:** Scientific paper  
**Source of citations:** Google Scholar  
**Format:** Journal  
**Citations:** 7
- 16** Gonzalo Martín-Vázquez; Carlos Sabín. Closed timelike curves and chronology protection in quantum and classical simulators. *Classical and Quantum Gravity*. 37, pp. 045013. (United Kingdom): Institute of Physics, 27/01/2020. ISSN 0264-9381  
**DOI:** [10.1088/1361-6382/ab5f3f](https://doi.org/10.1088/1361-6382/ab5f3f)  
**Type of production:** Scientific paper  
**Impact source:** WOS (JCR)  
**Impact index in year of publication:** 3,487  
**Position of publication:** 13  
**Format:** Journal  
**Category:** Science Edition - PHYSICS, MULTIDISCIPLINARY  
**Journal in the top 25%:** Yes  
**No. of journals in the cat.:** 81
- 17** C.W. Sandbo Chang; Carlos Sabín; P. Forn-Díaz; Fernando Quijandría; A. M. Vadiraj; I. Nsanzineza; G. Johansson; C. M. Wilson. Observation of three-photon spontaneous parametric downconversion in a superconducting parametric cavity. *Physical Review X*. 10, pp. 011011. (United States of America): American Physical Society, 16/01/2020. Available on-line at: <<https://journals.aps.org/prx/abstract/10.1103/PhysRevX.10.011011>>. ISSN 2160-3308  
**DOI:** [10.1103/PhysRevX.10.011011](https://doi.org/10.1103/PhysRevX.10.011011)  
**Type of production:** Scientific paper  
**Position of signature:** 2  
**Total no. authors:** 8  
**Format:** Journal



**Impact source:** WOS (JCR)

**Impact index in year of publication:** 12,211

**Position of publication:** 5

**Source of citations:** Google Scholar

**Category:** Science Edition - PHYSICS, MULTIDISCIPLINARY

**Journal in the top 25%:** Yes

**No. of journals in the cat.:** 81

**Citations:** 122

- 18** Andrés Agustí; Enrique Solano; Carlos Sabín. Entanglement through qubit motion and the dynamical Casimir effect. *Physical Review A*. 99, pp. 052328. American Physical Society, 20/05/2019. ISSN 2469-9926

**DOI:** 10.1103/PhysRevA.99.052328

**Type of production:** Scientific paper

**Source of citations:** Google Scholar

**Format:** Scientific and technical document or report

**Citations:** 10

- 19** Javier Faba García; Carlos Sabín. Dirac equation in exotic spacetimes. *Physical Review D*. 99, pp. 025008. American Physical Society, 14/01/2019. Available on-line at: <<https://journals.aps.org/prd/abstract/10.1103/PhysRevD.99.025008>>. ISSN 2470-0010

**DOI:** 10.1103/PhysRevD.99.025008

**Type of production:** Scientific paper

**Impact source:** WOS (JCR)

**Impact index in year of publication:** 4,394

**Position of publication:** 7

**Format:** Journal

**Category:** Science Edition - PHYSICS, PARTICLES & FIELDS

**Journal in the top 25%:** Yes

**No. of journals in the cat.:** 29

- 20** Carlos Sabín. Light propagation through nanophotonics wormholes. *Universe*. 4, pp. 137. MDPI, 29/11/2018. Available on-line at: <<https://www.mdpi.com/2218-1997/4/12/137/htm>>. ISSN 2218-1997

**DOI:** 10.3390/universe4120137

**Type of production:** Scientific paper

**Impact source:** WOS (JCR)

**Impact index in year of publication:** 2,165

**Position of publication:** 34

**Format:** Journal

**Category:** Astronomy and Astrophysics

**No. of journals in the cat.:** 69

- 21** Carlos Sanchidrián-Vaca; Carlos Sabín. Parameter estimation of wormholes beyond the Heisenberg limit. *Universe*. 4, pp. 115. MDPI, 06/11/2018. Available on-line at: <<https://www.mdpi.com/2218-1997/4/11/115/htm>>. ISSN 2218-1997

**DOI:** 10.3390/universe4110115

**Type of production:** Scientific paper

**Corresponding author:** Yes

**Impact source:** WOS (JCR)

**Impact index in year of publication:** 2,165

**Position of publication:** 34

**Format:** Journal

**Category:** Astronomy and Astrophysics

**No. of journals in the cat.:** 69

- 22** C. W. Sandbo Chang; Michael Simoen; José Aumentado; Carlos Sabín; Pol Forn-Díaz; A.M. Vadiraj; Fernando Quijandría; Göran Johansson; Ivette Fuentes; C. M. Wilson. Generating Multimode Entangled Microwaves with a Superconducting Parametric Cavity. *Physical Review Applied*. 10, pp. 044019. (United States of America): American Physical Society, 08/10/2018. Available on-line at: <<https://journals.aps.org/prapplied/abstract/10.1103/PhysRevApplied.10.044019>>. ISSN 2331-7019

**DOI:** 10.1103/PhysRevApplied.10.044019

**Type of production:** Scientific paper

**Position of signature:** 4

**Total no. authors:** 10

**Format:** Journal



**Impact source:** WOS (JCR)  
**Impact index in year of publication:** 4,782  
**Position of publication:** 24  
**Source of citations:** Google Scholar

**Category:** Science Edition - PHYSICS, APPLIED  
**Journal in the top 25%:** Yes  
**No. of journals in the cat.:** 146  
**Citations:** 72

- 23** Carlos Sabin. Quantum simulation of Rindler transformations. EPJ Quantum Technology. 5, pp. 5. Springer, 18/05/2018. Available on-line at: <<https://link.springer.com/article/10.1140/epjqt/s40507-018-0069-0>>. ISSN 2196-0763

**DOI:** 10.1140/epjqt/s40507-018-0069-0

**Type of production:** Scientific paper

**Format:** Journal

**Impact source:** WOS (JCR)  
**Impact index in year of publication:** 2,436  
**Position of publication:** 18

**Category:** Physics Atomic, Molecular & Chemical  
**No. of journals in the cat.:** 36

- 24** Carlos Sabin. One-dimensional sections of exotic spacetimes with superconducting circuits. New Journal of Physics. 20, pp. 053028. IOP Publishing, 10/05/2018. Available on-line at: <<http://iopscience.iop.org/article/10.1088/1367-2630/aac0db>>. ISSN 1367-2630

**DOI:** <https://doi.org/10.1088/1367-2630/aac0db>

**Type of production:** Scientific paper

**Format:** Journal

**Impact source:** WOS (JCR)  
**Impact index in year of publication:** 3,579  
**Position of publication:** 11

**Category:** Science Edition - PHYSICS, MULTIDISCIPLINARY  
**Journal in the top 25%:** Yes  
**No. of journals in the cat.:** 78

**Source of citations:** Google Scholar

**Citations:** 1

- 25** Borja Peropadre; Joonsuk Huh; Carlos Sabin. Dynamical Casimir Effect for Gaussian boson sampling. Scientific Reports. 8, pp. 3751. Springer Nature, 28/02/2018. Available on-line at: <<https://www.nature.com/articles/s41598-018-22086-2>>. ISSN 2045-2322

**DOI:** <https://doi.org/10.1038/s41598-018-22086-2>

**Type of production:** Scientific paper

**Format:** Journal

**Corresponding author:** Yes

**Impact source:** WOS (JCR)  
**Impact index in year of publication:** 4,259  
**Position of publication:** 10

**Category:** Science Edition - MULTIDISCIPLINARY SCIENCES  
**Journal in the top 25%:** Yes  
**No. of journals in the cat.:** 64

**Source of citations:** Google Scholar

**Citations:** 13

- 26** Jesús Mateos; Carlos Sabin. Quantum simulation of traversable wormhole spacetimes in a Bose-Einstein condensate. Physical Review D. 97, pp. 044045. American Physical Society, 28/02/2018. Available on-line at: <<https://journals.aps.org/prd/abstract/10.1103/PhysRevD.97.044045>>. ISSN 2470-0010

**DOI:** 10.1103/PhysRevD.97.044045

**Type of production:** Scientific paper

**Format:** Journal

**Impact source:** WOS (JCR)  
**Impact index in year of publication:** 4,557  
**Position of publication:** 14

**Category:** Science Edition - ASTRONOMY & ASTROPHYSICS  
**Journal in the top 25%:** Yes  
**No. of journals in the cat.:** 63

**Source of citations:** Google Scholar

**Citations:** 25



- 27** Richard Howl; Carlos Sabín; Lucia Hackermuller; Ivette Fuentes. Quantum decoherence of phonons in Bose-Einstein condensates. *Journal of Physics B: Atomic, Molecular and Optical Physics*. 51, pp. 015303. Institute of Physics Publishing, 29/11/2017. Available on-line at: <<http://iopscience.iop.org/article/10.1088/1361-6455/aa9622/meta>>. ISSN 0953-4075  
**DOI:** <https://doi.org/10.1088/1361-6455/aa9622>  
**Type of production:** Scientific paper **Format:** Journal  
**Position of signature:** 2  
**Total no. authors:** 4  
**Impact source:** WOS (JCR) **Category:** Science Edition - OPTICS  
**Impact index in year of publication:** 1,792  
**Position of publication:** 43 **No. of journals in the cat.:** 92  
**Source of citations:** Google Scholar **Citations:** 16
- 28** Carlos Sabín; Borja Peropadre; Lucas Lamata; Enrique Solano. Simulating superluminal physics with superconducting quantum technology. *Physical Review A*. 96, pp. 032121. American Physical Society, 27/09/2017. Available on-line at: <<https://journals.aps.org/pr/abstract/10.1103/PhysRevA.96.032121>>. ISSN 2469-9926  
**DOI:** [10.1103/PhysRevA.96.032121](https://doi.org/10.1103/PhysRevA.96.032121)  
**Type of production:** Scientific paper **Format:** Journal  
**Position of signature:** 1  
**Total no. authors:** 4 **Corresponding author:** Yes  
**Impact source:** WOS (JCR) **Category:** Science Edition - OPTICS  
**Impact index in year of publication:** 2,925 **Journal in the top 25%:** Yes  
**Position of publication:** 21 **No. of journals in the cat.:** 92  
**Source of citations:** Google Scholar **Citations:** 12
- 29** Simone Felicetti; Guillermo Romero; Enrique Solano; Carlos Sabín. Quantum Rabi model in a superfluid Bose-Einstein condensate. *Physical Review A*. 96, pp. 033839. American Physical Society, 22/09/2017. Available on-line at: <<https://journals.aps.org/pr/abstract/10.1103/PhysRevA.96.033839>>. ISSN 2469-9926  
**DOI:** [10.1103/PhysRevA.96.033839](https://doi.org/10.1103/PhysRevA.96.033839)  
**Type of production:** Scientific paper **Format:** Journal  
**Impact source:** WOS (JCR) **Category:** Science Edition - OPTICS  
**Impact index in year of publication:** 2,925 **Journal in the top 25%:** Yes  
**Position of publication:** 21 **No. of journals in the cat.:** 92  
**Source of citations:** Google Scholar **Citations:** 3
- 30** David Edward Bruschi; Carlos Sabín; Gheorghe Sorin Paraoanu. Entanglement, coherence, and redistribution of quantum resources in double spontaneous downconversion processes. *Physical Review A*. 95, pp. 062324. American Physical Society, 16/06/2017.  
**DOI:** <https://doi.org/10.1103/PhysRevA.95.062324>  
**Type of production:** Scientific paper **Format:** Journal  
**Impact source:** WOS (JCR) **Category:** Science Edition - OPTICS  
**Impact index in year of publication:** 2,925 **Journal in the top 25%:** Yes  
**Position of publication:** 21 **No. of journals in the cat.:** 92  
**Source of citations:** Google Scholar **Citations:** 19



- 31** Laura García-Álvarez; Simone Felicetti; Enrique Rico; Enrique Solano; Carlos Sabín. Entanglement of superconducting qubits via acceleration radiation. *Scientific Reports*. 7, pp. 657. Nature Publishing Group, 06/04/2017.  
**DOI:** 10.1038/s41598-017-00770-z  
**Type of production:** Scientific paper  
**Impact source:** WOS (JCR)  
**Impact index in year of publication:** 4,259  
**Position of publication:** 10  
**Source of citations:** Google Scholar  
**Format:** Journal  
**Category:** Science Edition - MULTIDISCIPLINARY SCIENCES  
**Journal in the top 25%:** Yes  
**No. of journals in the cat.:** 64  
**Citations:** 29
- 32** Carlos Sabín. Quantum detection of wormholes. *Scientific Reports*. 7, pp. 716. Nature Publishing Group, 06/04/2017. ISSN 2045-2322  
**DOI:** 10.1038/s41598-017-00882-6  
**Type of production:** Scientific paper  
**Corresponding author:** Yes  
**Impact source:** WOS (JCR)  
**Impact index in year of publication:** 4,259  
**Position of publication:** 10  
**Source of citations:** Google Scholar  
**Format:** Journal  
**Category:** Science Edition - MULTIDISCIPLINARY SCIENCES  
**Journal in the top 25%:** Yes  
**No. of journals in the cat.:** 64  
**Citations:** 16
- 33** Daniel Nadir Samos-Saénz de Buruaga; Carlos Sabín. Quantum coherence in the Dynamical Casimir Effect. *Physical Review A*. 95, pp. 022307. American Physical Society, 06/02/2017.  
**DOI:** 10.1103/PhysRevA.95.022307  
**Type of production:** Scientific paper  
**Impact source:** WOS (JCR)  
**Impact index in year of publication:** 2,925  
**Position of publication:** 21  
**Source of citations:** Google Scholar  
**Format:** Journal  
**Category:** Science Edition - OPTICS  
**Journal in the top 25%:** Yes  
**No. of journals in the cat.:** 92  
**Citations:** 18
- 34** Simone Felicetti; Enrique Rico; Carlos Sabín; Till Ockenfels; Johannes Koch; Martin Leder; Christopher Grossert; Martin Weitz; Enrique Solano. Quantum Rabi model in the Brillouin zone with ultracold atoms. *Physical Review A*. 95, pp. 013827. American Physical Society, 18/01/2017.  
**DOI:** 10.1103/PhysRevA.95.013827  
**Type of production:** Scientific paper  
**Impact source:** WOS (JCR)  
**Impact index in year of publication:** 2,765  
**Position of publication:** 17  
**Source of citations:** Google Scholar  
**Format:** Journal  
**Category:** Science Edition - OPTICS  
**Journal in the top 25%:** Yes  
**No. of journals in the cat.:** 90  
**Citations:** 28
- 35** Carlos Sabín. Mapping curved spacetimes into Dirac spinors. *Scientific Reports*. 7, pp. 40346. Nature Publishing Group, 11/01/2017. ISSN 2045-2322  
**DOI:** 10.1038/srep40346  
**Type of production:** Scientific paper  
**Corresponding author:** Yes  
**Impact source:** WOS (JCR)  
**Format:** Journal

**Impact index in year of publication:** 5,228**Position of publication:** 7**Source of citations:** Google Scholar**Category:** Science Edition - MULTIDISCIPLINARY SCIENCES**Journal in the top 25%:** Yes**No. of journals in the cat.:** 63**Citations:** 13

- 36** Carlos Sabín. Quantum simulation of traversable wormhole spacetimes in a dc-SQUID array. *Physical Review D*. 94, pp. 081501. American Physical Society, 04/10/2016. Available on-line at: <<https://journals.aps.org/prd/abstract/10.1103/PhysRevD.94.081501>>. ISSN 2470-0010

**DOI:** 10.1103/PhysRevD.94.081501**Type of production:** Scientific paper**Corresponding author:** Yes**Impact source:** WOS (JCR)**Impact index in year of publication:** 4,557**Position of publication:** 14**Source of citations:** Google Scholar**Format:** Journal**Category:** Astronomy and Astrophysics**Journal in the top 25%:** Yes**No. of journals in the cat.:** 63**Citations:** 21

- 37** Carlos Sabín; Jan Kohlrus; David Bruschi; Ivette Fuentes. Thermal noise in BEC-phononic gravitational wave detectors. *EPJ Quantum Technology*. 3, pp. 8. Springer, 20/05/2016. Available on-line at: <<https://epjquantumtechnology.springeropen.com/track/pdf/10.1140/epjqt/s40507-016-0046-4?site=epjquantumtechnology.springeropen.com>>. ISSN 2196-0763

**DOI:** <http://dx.doi.org/10.1140/epjqt/s40507-016-0046-4>**Type of production:** Scientific paper**Corresponding author:** Yes**Source of citations:** Google Scholar**Format:** Journal**Citations:** 19

- 38** David Edward Bruschi; Carlos Sabín; Pieter Kok; Göran Johansson; Per Delsing; Ivette Fuentes. Towards universal quantum computation through relativistic motion. *Scientific Reports*. 6, pp. 18349. Nature Publishing Group, 10/02/2016. ISSN 2045-2322

**DOI:** 10.1038/srep18349**Type of production:** Scientific paper**Corresponding author:** Yes**Impact source:** WOS (JCR)**Impact index in year of publication:** 5,228**Position of publication:** 7**Source of citations:** Google Scholar**Format:** Journal**Category:** Science Edition - MULTIDISCIPLINARY SCIENCES**Journal in the top 25%:** Yes**No. of journals in the cat.:** 63**Citations:** 28

- 39** Antonio Mezzacapo; Enrique Rico; Carlos Sabín; Íñigo Egusquiza; Lucas Lamata; Enrique Solano. Non-abelian lattice gauge theories in superconducting circuits. *Physical Review Letters*. 115, pp. 240502. American Physical Society, 09/12/2015. ISSN 0031-9007

**DOI:** 10.1103/PhysRevLett.115.240502**Type of production:** Scientific paper**Position of signature:** 3**Total no. authors:** 6**Impact source:** WOS (JCR)**Impact index in year of publication:** 7,326**Format:** Journal**Category:** Science Edition - PHYSICS, MULTIDISCIPLINARY**Journal in the top 25%:** Yes

**Position of publication:** 6**No. of journals in the cat.:** 79**Source of citations:** Google Scholar**Citations:** 124

- 40** Ashley Wilkins; Carlos Sabín. Quantum estimation via parametric amplification in circuit-QED arrays. *Physical Review A*. 92, pp. 062102. American Physical Society, 03/12/2015. ISSN 2469-9926

**DOI:** 10.1103/PhysRevA.92.062102**Type of production:** Scientific paper**Format:** Journal**Corresponding author:** Yes**Impact source:** WOS (JCR)**Category:** Science Edition - OPTICS**Impact index in year of publication:** 2,765**Journal in the top 25%:** Yes**Position of publication:** 17**No. of journals in the cat.:** 90

- 41** Carlos Sabín; Pablo Barberis-Blostein; Christopher Hernández; Robert B. Mann; Ivette Fuentes. Effects of three-body collisions in a two-mode Bose-Einstein condensate. *Journal of Mathematical Physics*. 56, pp. 112102. American Institute of Physics, 25/11/2015. Available on-line at: <<http://aip.scitation.org/doi/abs/10.1063/1.4936314>>. ISSN 0022-2488

**DOI:** <https://doi.org/10.1063/1.4936314>**Type of production:** Scientific paper**Format:** Journal**Corresponding author:** Yes**Impact source:** WOS (JCR)**Category:** Science Edition - PHYSICS, MATHEMATICAL**Impact index in year of publication:** 1,077**Position of publication:** 33**No. of journals in the cat.:** 55

- 42** Carlos Sabín; Gerardo Adesso. Generation of quantum steering and interferometric power in the Dynamical Casimir Effect. *Physical Review A*. 92, pp. 042107. American Physical Society, 12/10/2015. ISSN 2469-9926

**DOI:** [doi.org/10.1103/PhysRevA.92.042107](https://doi.org/10.1103/PhysRevA.92.042107)**Type of production:** Scientific paper**Format:** Journal**Corresponding author:** Yes**Impact source:** WOS (JCR)**Category:** Science Edition - OPTICS**Impact index in year of publication:** 2,765**Journal in the top 25%:** Yes**Position of publication:** 17**No. of journals in the cat.:** 90**Source of citations:** Google Scholar**Citations:** 35

- 43** Simone Felicetti; Carlos Sabín; Ivette Fuentes; Lucas Lamata; Guillermo Romero; Enrique Solano. Relativistic motion with superconducting circuits. *Physical Review B*. 92, pp. 064501. American Physical Society, 03/08/2015. Available on-line at: <<https://journals.aps.org/prb/abstract/10.1103/PhysRevB.92.064501>>. ISSN 2469-9950

**DOI:** 10.1103/PhysRevB.92.064501**Type of production:** Scientific paper**Impact source:** WOS (JCR)**Category:** Science Edition - PHYSICS, CONDENSED MATTER**Impact index in year of publication:** 3,513**Journal in the top 25%:** Yes**Position of publication:** 16**No. of journals in the cat.:** 67**Source of citations:** Google Scholar**Citations:** 51

- 44** Carlos Sabín; Ivette Fuentes; Göran Johansson. Quantum discord in the Dynamical Casimir Effect. *Physical Review A*. 92, pp. 012314. APS, 22/06/2015. Available on-line at: <<https://journals.aps.org/pra/abstract/10.1103/PhysRevA.92.012314>>. ISSN 2469-9926



**DOI:** doi.org/10.1103/PhysRevA.92.012314

**Type of production:** Scientific paper

**Corresponding author:** Yes

**Impact source:** WOS (JCR)

**Impact index in year of publication:** 2,765

**Position of publication:** 17

**Source of citations:** Google Scholar

**Format:** Journal

**Category:** Science Edition - OPTICS

**Journal in the top 25%:** Yes

**No. of journals in the cat.:** 90

**Citations:** 25

- 45** Joel Lindkvist; Carlos Sabín; Göran Johansson; Ivette Fuentes. Motion and gravity effects in the precision of quantum clocks. *Scientific Reports*. 5, pp. 10070. Nature Publishing group, 19/05/2015. Available on-line at: <<http://www.nature.com/articles/srep10070>>. ISSN 2045-2322

**DOI:** 10.1038/srep10070

**Type of production:** Scientific paper

**Impact source:** WOS (JCR)

**Impact index in year of publication:** 5,228

**Position of publication:** 7

**Source of citations:** Google Scholar

**Format:** Journal

**Category:** Science Edition - MULTIDISCIPLINARY SCIENCES

**Journal in the top 25%:** Yes

**No. of journals in the cat.:** 63

**Citations:** 21

- 46** Tupac Bravo; Carlos Sabín; Ivette Fuentes. Analog quantum simulation of gravitational waves in a Bose-Einstein condensate. *EPJ quantum technology*. 2, pp. 3. Springer, 04/02/2015. Available on-line at: <<https://epjquantumtechnology.springeropen.com/articles/10.1140/epjqt16>>. ISSN 2196-0763

**DOI:** <https://doi.org/10.1140/epjqt16>

**Type of production:** Scientific paper

**Source of citations:** Google Scholar

**Format:** Journal

**Citations:** 4

- 47** Joel Lindkvist; Carlos Sabín; Ivette Fuentes; Andrzej Dragan; Ida-Maria Svensson; Per Delsing; Göran Johansson. Twin paradox with macroscopic clocks in superconducting circuits. *Physical Review A*. 90, pp. 052113. American Physical Society, 18/11/2014. Available on-line at: <<https://journals.aps.org/pr/abstract/10.1103/PhysRevA.90.052113>>. ISSN 2469-9926

**DOI:** 10.1103/PhysRevA.90.052113

**Type of production:** Scientific paper

**Impact source:** WOS (JCR)

**Impact index in year of publication:** 2,765

**Position of publication:** 17

**Source of citations:** Google Scholar

**Format:** Journal

**Category:** Science Edition - OPTICS

**Journal in the top 25%:** Yes

**No. of journals in the cat.:** 90

**Citations:** 45

- 48** Carlos Sabín; Angela White; Lucia Hackermuller; Ivette Fuentes. Impurities as a quantum thermometer for an ultracold Bose-Einstein condensate. *Scientific Reports*. 4, pp. 6436. Nature Publishing Group, 28/08/2014. Available on-line at: <<http://www.nature.com/articles/srep06436>>. ISSN 2045-2322

**DOI:** 10.1038/srep06436

**Type of production:** Scientific paper

**Impact source:** WOS (JCR)

**Impact index in year of publication:** 5,228

**Position of publication:** 7

**Source of citations:** Google Scholar

**Format:** Journal

**Category:** Science Edition - MULTIDISCIPLINARY SCIENCES

**Journal in the top 25%:** Yes

**No. of journals in the cat.:** 63

**Citations:** 100

- 49** Carlos Sabín; David Edward Bruschi; Mehdi Ahmadi; Ivette Fuentes. Phonon creation by gravitational waves. *New Journal of Physics*. 16, pp. 085003. Institute of Physics, 07/08/2014. Available on-line at: <<http://iopscience.iop.org/article/10.1088/1367-2630/16/8/085003/meta>>. ISSN 1367-2630  
**DOI:** 10.1088/1367-2630/16/8/085003  
**Type of production:** Scientific paper  
**Impact source:** WOS (JCR)  
**Impact index in year of publication:** 3,558  
**Position of publication:** 10  
**Source of citations:** Google Scholar  
**Format:** Journal  
**Category:** Science Edition - PHYSICS, MULTIDISCIPLINARY  
**Journal in the top 25%:** Yes  
**No. of journals in the cat.:** 78  
**Citations:** 128
- 50** Mehdi Ahmadi; David Edward Bruschi; Carlos Sabín; Gerardo Adesso; Ivette Fuentes. Relativistic quantum metrology: exploiting relativity to improve quantum measurement technologies. *Scientific Reports*. 4, pp. 4996. Nature Publishing Group, 22/05/2014. Available on-line at: <<https://www.nature.com/articles/srep04996>>. ISSN 2045-2322  
**DOI:** 10.1038/srep04996  
**Type of production:** Scientific paper  
**Impact source:** WOS (JCR)  
**Impact index in year of publication:** 5,228  
**Position of publication:** 7  
**Source of citations:** Google Scholar  
**Format:** Journal  
**Category:** Science Edition - MULTIDISCIPLINARY SCIENCES  
**Journal in the top 25%:** Yes  
**No. of journals in the cat.:** 63  
**Citations:** 110
- 51** David Edward Bruschi; Carlos Sabín; Angela White; Valentina Baccetti; Daniel K. L. Oi; Ivette Fuentes. Testing the effects of gravity and motion on quantum entanglement in space-based experiments. *New Journal of Physics*. 16, pp. 053041. Institute of Physics, 21/05/2014. Available on-line at: <<http://iopscience.iop.org/article/10.1088/1367-2630/16/5/053041>>. ISSN 1367-2630  
**DOI:** <https://doi.org/10.1088/1367-2630/16/5/053041>  
**Type of production:** Scientific paper  
**Impact source:** WOS (JCR)  
**Impact index in year of publication:** 3,558  
**Position of publication:** 10  
**Source of citations:** Google Scholar  
**Format:** Journal  
**Category:** Science Edition - PHYSICS, MULTIDISCIPLINARY  
**Journal in the top 25%:** Yes  
**No. of journals in the cat.:** 78  
**Citations:** 59
- 52** Nicolai Friis; Antony Lee; Kevin Truong; Carlos Sabín; Enrique Solano; Göran Johansson; Ivette Fuentes. Relativistic quantum teleportation with superconducting circuits. *Physical Review Letters*. 110, pp. 113602. American Physical Society, 12/03/2013. Available on-line at: <<https://journals.aps.org/prl/abstract/10.1103/PhysRevLett.110.113602>>. ISSN 0031-9007  
**DOI:** 10.1103/PhysRevLett.110.113602  
**Type of production:** Scientific paper  
**Corresponding author:** Yes  
**Impact source:** WOS (JCR)  
**Impact index in year of publication:** 7,645  
**Position of publication:** 6  
**Source of citations:** Google Scholar  
**Format:** Journal  
**Category:** Science Edition - PHYSICS, MULTIDISCIPLINARY  
**Journal in the top 25%:** Yes  
**No. of journals in the cat.:** 79  
**Citations:** 127



- 53** Massimo Borrelli; Carlos Sabín; Gerardo Adesso; Francesco Plastina; Sabrina Maniscalco. Dynamics of atom-atom correlations in the Fermi problem. *New Journal of Physics*. 14, pp. 103010. Institute of Physics, 03/10/2012. Available on-line at: <<http://iopscience.iop.org/article/10.1088/1367-2630/14/10/103010>>. ISSN 1367-2630  
**DOI:** <https://doi.org/10.1088/1367-2630/14/10/103010>  
**Type of production:** Scientific paper  
**Impact source:** WOS (JCR)  
**Impact index in year of publication:** 4,063  
**Position of publication:** 9  
**Source of citations:** Google Scholar  
**Format:** Journal  
**Category:** Science Edition - PHYSICS, MULTIDISCIPLINARY  
**Journal in the top 25%:** Yes  
**No. of journals in the cat.:** 83  
**Citations:** 9
- 54** Carlos Sabín; Borja Peropadre; Marco del Rey; Eduardo Martín-Martínez. Extracting past-future vacuum correlations using circuit QED. *Physical Review Letters*. 109, pp. 033602. American Physical Society, 17/07/2012. Available on-line at: <<https://journals.aps.org/prl/abstract/10.1103/PhysRevLett.109.033602>>. ISSN 0031-9007  
**DOI:** [10.1103/PhysRevLett.109.033602](https://doi.org/10.1103/PhysRevLett.109.033602)  
**Type of production:** Scientific paper  
**Corresponding author:** Yes  
**Impact source:** WOS (JCR)  
**Impact index in year of publication:** 7,645  
**Position of publication:** 6  
**Source of citations:** Google Scholar  
**Format:** Journal  
**Category:** Science Edition - PHYSICS, MULTIDISCIPLINARY  
**Journal in the top 25%:** Yes  
**No. of journals in the cat.:** 79  
**Citations:** 86
- 55** Carlos Sabín; Jorge Casanova; Juan José Garcia-Ripoll; Lucas Lamata; Enrique Solano; Juan León. Encoding relativistic potential dynamics into free evolution. *Physical Review A*. 85, pp. 052301. American Physical Society, 02/05/2012. Available on-line at: <<https://journals.aps.org/pr/abstract/10.1103/PhysRevA.85.052301>>. ISSN 2469-9926  
**DOI:** [10.1103/PhysRevA.85.052301](https://doi.org/10.1103/PhysRevA.85.052301)  
**Type of production:** Scientific paper  
**Impact source:** WOS (JCR)  
**Impact index in year of publication:** 2,765  
**Position of publication:** 17  
**Source of citations:** Google Scholar  
**Format:** Journal  
**Category:** Science Edition - OPTICS  
**Journal in the top 25%:** Yes  
**No. of journals in the cat.:** 90  
**Citations:** 5
- 56** Marco del Rey; Carlos Sabín; Juan León. Short-time quantum detection: probing quantum fluctuations. *Physical Review A*. 85, pp. 045802. American Physical Society, 09/04/2012. Available on-line at: <<https://journals.aps.org/pr/abstract/10.1103/PhysRevA.85.045802>>. ISSN 2469-9926  
**DOI:** [10.1103/PhysRevA.85.045802](https://doi.org/10.1103/PhysRevA.85.045802)  
**Type of production:** Scientific paper  
**Impact source:** WOS (JCR)  
**Impact index in year of publication:** 2,765  
**Position of publication:** 17  
**Source of citations:** Google Scholar  
**Format:** Journal  
**Category:** Science Edition - OPTICS  
**Journal in the top 25%:** Yes  
**No. of journals in the cat.:** 90  
**Citations:** 8



- 57** Jorge Casanova; Carlos Sabín; Juan León; Íñigo Luis Egusquiza; Rene Gerritsma; Cristian F. Roos; Juan José García-Ripoll; Enrique Solano. Quantum simulation of the Majorana equation and unphysical operations. *Physical Review X*. 1, pp. 021018. American Physical Society, 09/12/2011. Available on-line at: <<https://journals.aps.org/prx/abstract/10.1103/PhysRevX.1.021018>>. ISSN 2160-3308  
**DOI:** 10.1103/PhysRevX.1.021018  
**Type of production:** Scientific paper  
**Impact source:** WOS (JCR)  
**Impact index in year of publication:** 8,701  
**Position of publication:** 5  
**Source of citations:** Google Scholar  
**Format:** Journal  
**Category:** Science Edition - PHYSICS, MULTIDISCIPLINARY  
**Journal in the top 25%:** Yes  
**No. of journals in the cat.:** 79  
**Citations:** 94
- 58** Carlos Sabín; Marco del Rey; Juan León. Fermi problem with artificial atoms in circuit QED. *Physical Review Letters*. 107, pp. 150402. American Physical Society, 06/10/2011. Available on-line at: <<https://journals.aps.org/prl/abstract/10.1103/PhysRevLett.107.150402>>. ISSN 0031-9007  
**DOI:** 10.1103/PhysRevLett.107.150402  
**Type of production:** Scientific paper  
**Corresponding author:** Yes  
**Impact source:** WOS (JCR)  
**Impact index in year of publication:** 7,645  
**Position of publication:** 6  
**Source of citations:** Google Scholar  
**Format:** Journal  
**Category:** Science Edition - PHYSICS, MULTIDISCIPLINARY  
**Journal in the top 25%:** Yes  
**No. of journals in the cat.:** 79  
**Citations:** 41
- 59** Carlos Sabín; Juan León; Juan José García-Ripoll. Detecting ground-state qubit self-excitations: slow quantum anti-Zeno effect. *Physical Review B*. 84, pp. 024516. American Physical Society, 14/07/2011. Available on-line at: <<https://journals.aps.org/prb/abstract/10.1103/PhysRevB.84.024516>>. ISSN 2469-9950  
**DOI:** 10.1103/PhysRevB.84.024516  
**Type of production:** Scientific paper  
**Corresponding author:** Yes  
**Impact source:** WOS (JCR)  
**Impact index in year of publication:** 3,513  
**Position of publication:** 16  
**Source of citations:** Google Scholar  
**Format:** Journal  
**Category:** Science Edition - PHYSICS, CONDENSED MATTER  
**Journal in the top 25%:** Yes  
**No. of journals in the cat.:** 67  
**Citations:** 4
- 60** Carlos Sabín; Juan José García-Ripoll; Enrique Solano; Juan León. Dynamics of entanglement via propagating microwave photons. *Physical Review B*. 81, pp. 184501. American Physical Society, 04/05/2010. Available on-line at: <<https://journals.aps.org/prb/abstract/10.1103/PhysRevB.81.184501>>. ISSN 2469-9950  
**DOI:** 10.1103/PhysRevB.81.184501  
**Type of production:** Scientific paper  
**Corresponding author:** Yes  
**Impact source:** WOS (JCR)  
**Impact index in year of publication:** 3,513  
**Position of publication:** 16  
**Source of citations:** Google Scholar  
**Format:** Journal  
**Category:** Science Edition - PHYSICS, CONDENSED MATTER  
**Journal in the top 25%:** Yes  
**No. of journals in the cat.:** 67  
**Citations:** 33



- 61** Juan León; Carlos Sabín. Atom-atom entanglement generated at early times by two-photon emission. *Physica Scripta*. T135, pp. 014034. 31/07/2009. Available on-line at: <<http://iopscience.iop.org/article/10.1088/0031-8949/2009/T135/014034>>. ISSN 0031-8949  
**DOI:** <https://doi.org/10.1088/0031-8949/2009/T135/014034>  
**Type of production:** Scientific paper  
**Impact source:** WOS (JCR)  
**Impact index in year of publication:** 1,088  
**Position of publication:** 35  
**Source of citations:** Google Scholar  
**Format:** Journal  
**Category:** Science Edition - PHYSICS, MULTIDISCIPLINARY  
**No. of journals in the cat.:** 71  
**Citations:** 1
- 62** Juan León; Carlos Sabín. A case of entanglement generation between causally disconnected atoms. *International Journal of Quantum Information*. 7, pp. 187. World Scientific, 01/07/2009. Available on-line at: <<http://www.worldscientific.com/doi/abs/10.1142/S0219749909004773>>. ISSN 0219-7499  
**DOI:** <https://doi.org/10.1142/S0219749909004773>  
**Type of production:** Scientific paper  
**Corresponding author:** Yes  
**Impact source:** WOS (JCR)  
**Impact index in year of publication:** 0,632  
**Position of publication:** 41  
**Source of citations:** Google Scholar  
**Format:** Journal  
**Category:** Science Edition - PHYSICS, MATHEMATICAL  
**No. of journals in the cat.:** 47  
**Citations:** 5
- 63** Juan León; Carlos Sabín. Generation of atom-atom correlations inside and outside the mutual light cone. *Physical Review A*. 79, pp. 012304. American Physical Society, 08/01/2009. Available on-line at: <<https://journals.aps.org/pr/abstract/10.1103/PhysRevA.79.012304>>. ISSN 2469-9926  
**DOI:** 10.1103/PhysRevA.79.012304  
**Type of production:** Scientific paper  
**Corresponding author:** Yes  
**Impact source:** WOS (JCR)  
**Impact index in year of publication:** 2,765  
**Position of publication:** 17  
**Source of citations:** Google Scholar  
**Format:** Journal  
**Category:** Optics  
**Journal in the top 25%:** Yes  
**No. of journals in the cat.:** 90  
**Citations:** 23
- 64** Juan León; Carlos Sabín. Photon exchange and correlation transfer in atom-atom entanglement dynamics. *Physical Review A*. 79, pp. 012301. American Physical Society, 06/01/2009. Available on-line at: <<https://journals.aps.org/pr/abstract/10.1103/PhysRevA.79.012304>>. ISSN 2469-9926  
**DOI:** 10.1103/PhysRevA.79.012301  
**Type of production:** Scientific paper  
**Corresponding author:** Yes  
**Impact source:** WOS (JCR)  
**Impact index in year of publication:** 2,765  
**Position of publication:** 17  
**Source of citations:** Google Scholar  
**Format:** Journal  
**Category:** Science Edition - OPTICS  
**Journal in the top 25%:** Yes  
**No. of journals in the cat.:** 90  
**Citations:** 29
- 65** Juan León; Carlos Sabín. Entanglement swapping between spacelike-separated atoms. *Physical Review A*. 78, pp. 052314. American Physical Society, 10/11/2008. Available on-line at: <<https://journals.aps.org/pr/abstract/10.1103/PhysRevA.78.052314>>. ISSN 2469-9926

**DOI:** 10.1103/PhysRevA.78.052314

**Type of production:** Scientific paper

**Corresponding author:** Yes

**Impact source:** WOS (JCR)

**Impact index in year of publication:** 2,765

**Position of publication:** 17

**Source of citations:** Google Scholar

**Format:** Journal

**Category:** Science Edition - OPTICS

**Journal in the top 25%:** Yes

**No. of journals in the cat.:** 90

**Citations:** 16

- 66** Carlos Sabín; Guillermo García-Alcaine. A classification of entanglement in three-qubit systems. The European Physical Journal D. 48, pp. 435. Springer, 06/06/2008. Available on-line at: <<https://link.springer.com/article/10.1140/epjd/e2008-00112-5>>. ISSN 1434-6060

**DOI:** 10.1140/epjd/e2008-00112-5

**Type of production:** Scientific paper

**Impact source:** WOS (JCR)

**Impact index in year of publication:** 1,397

**Position of publication:** 19

**Source of citations:** Google Scholar

**Format:** Journal

**Category:** Science Edition - PHYSICS, ATOMIC, MOLECULAR & CHEMICAL

**No. of journals in the cat.:** 31

**Citations:** 237

- 67** Carlos Sabín. Una nueva técnica para detectar ondas gravitacionales. Investigación y Ciencia. 462, Prensa Científica S.A., 01/03/2015.

**Type of production:** Popular science article

**Format:** Journal

- 68** To test the effect of gravity on quantum entanglement we need to go to space. The Conversation. 17/06/2014.

**Type of production:** Popular science article

**Format:** Journal

- 69** Carlos Sabín. How to test the twin paradox without using a spaceship. The Conversation. 16/04/2014.

**Type of production:** Popular science article

**Format:** Journal

- 70** Carlos Sabín. The next big deal: detecting gravitational waves at your desk. The Conversation. 21/03/2014.

**Type of production:** Popular science article

**Format:** Journal

- 71** Carlos Sabín. Información desde el vacío. Investigación y Ciencia. 441, pp. 14. Prensa Científica S. A., 01/06/2013.

**Type of production:** Popular science article

**Format:** Journal

- 72** Carlos Sabín. Mucha gente entiende la mecánica cuántica. Cañones de wolframio y otros textos científicos. Jot Down Books, 26/03/2019. ISBN 978-84-948084-7-0

**Type of production:** Book chapter

**Format:** Book

- 73** Carlos Sabín. Física cuántica y relativista: Más allá de nuestros sentidos. Catarata, 10/10/2022. ISBN 9788413525532

**Type of production:** Popular science book

- 74** Carlos Sabín. Verdades y mentiras de la física cuántica. Catarata, 02/03/2020. ISBN 978-84-9097-923-5

**Type of production:** Popular science book

**Format:** Book



- 75** Carlos Sabín. Interpretaciones cuánticas innecesarias. Investigación y Ciencia. 553, pp. 82. Prensa Científica, 01/10/2022. ISSN 0210-136X  
**Type of production:** Review **Format:** Journal
- 76** Carlos Sabín. Divulgación de autor. Investigación y Ciencia. 531, pp. 92 - 93. Prensa Científica, 01/12/2020. Available on-line at: <<https://www.investigacionyciencia.es/revistas/investigacion-y-ciencia/visitantes-interstelares-815/divulgacion-de-autor-19269>>. ISSN 0210-136X  
**Type of production:** Review **Format:** Journal
- 77** Carlos Sabín. Filosofías alternativas. Investigación y Ciencia. 518, pp. 94. Prensa Científica, 01/11/2019. Available on-line at: <<https://www.investigacionyciencia.es/revistas/investigacion-y-ciencia/verdades-mentiras-e-incertidumbres-782/filosofas-alternativas-17969>>. ISSN 0210-136X  
**Type of production:** Review **Format:** Journal
- 78** Carlos Sabín. Confusión cuántica. Investigación y Ciencia. 509, pp. 93. Prensa Científica, 01/02/2019. Available on-line at: <<https://www.investigacionyciencia.es/revistas/investigacion-y-ciencia/el-test-cuntico-definitivo-759/confusin-cuntica-17171>>. ISSN 0210-136X  
**Type of production:** Review **Format:** Journal
- 79** Carlos Sabín. Trampas bohmanas. Investigación y Ciencia. 501, pp. 92. Prensa Científica, 01/06/2018.  
**Type of production:** Review **Format:** Journal
- 80** Carlos Sabín. Cuantos completos. SciLogs (Investigación y Ciencia). Prensa Científica, 14/07/2015. Available on-line at: <<https://www.investigacionyciencia.es/blogs/fisica-y-quimica/85/posts>>.  
**Type of production:** Blog de divulgación científica **Format:** Scientific and technical document or report

### Works submitted to national or international conferences

- 1** **Title of the work:** Gaussian and nongaussian entanglement with microwave photons and superconducting qubits  
**Name of the conference:** Quantum 2023  
**Type of event:** Conference  
**City of event:** Torino, Italy  
**Date of event:** 10/09/2023  
**End date:** 15/09/2023  
**Organising entity:** University of Torino
- 2** **Title of the work:** Pairs and triplets of entangled microwave photons  
**Name of the conference:** IFF-IQOQI Workshop 2019  
**City of event:** Madrid, Community of Madrid, Spain  
**Date of event:** 06/11/2019  
**End date:** 08/11/2019  
**Organising entity:** Consejo Superior de Investigaciones Científicas **Type of entity:** State agency  
**City organizing entity:** Madrid, Community of Madrid, Spain  
Carlos Sabín.
- 3** **Title of the work:** Entanglement generation and simultaneity with superconducting qubits  
**Name of the conference:** Quantum Information and measurement (QIM) V: Quantum technologies  
**Type of event:** Conference **Geographical area:** Non EU International



**Type of participation:** Participatory - poster

**City of event:** Roma, Italy

**Date of event:** 04/04/2019

**End date:** 06/04/2019

**Organising entity:** The Optical Society

Carlos Sabín.

- 4** **Title of the work:** Dynamical Casimir Effect and Quantum Computing  
**Name of the conference:** Quantum Technology International Conference 2018  
**Type of event:** Conference **Geographical area:** Non EU International  
**Type of participation:** Participatory - oral communication  
**City of event:** París, France  
**Date of event:** 05/09/2018  
**End date:** 07/09/2018  
**Organising entity:** Laboratoire Kastler Brossel  
**With external admission assessment committee:** Yes  
Carlos Sabín.
- 5** **Title of the work:** Analogue quantum simulation of wormholes and exotic spacetimes  
**Name of the conference:** Journées de la Matière Condensée 2018 (16ème édition)  
**Type of event:** Conference **Geographical area:** Non EU International  
**Type of participation:** Participatory - oral communication  
**City of event:** Grenoble, France  
**Date of event:** 28/08/2018  
**End date:** 30/08/2018  
**Organising entity:** Société Française de Physique  
**With external admission assessment committee:** Yes  
Carlos Sabín.
- 6** **Title of the work:** Quantum physics and traversable wormholes  
**Name of the conference:** Workshop on Quantum Science and Quantum Technologies  
**Type of event:** Conference **Geographical area:** Non EU International  
**Type of participation:** Participatory - oral communication  
**City of event:** Trieste, Italy  
**Date of event:** 11/09/2017  
**End date:** 15/09/2017  
**Organising entity:** Abdus Salam International Center of Theoretical Physics  
**With external admission assessment committee:** Yes  
Carlos Sabín.
- 7** **Title of the work:** Relativistic physics and beyond with superconducting circuits  
**Name of the conference:** XXXVI Reunión Bial de la Real Sociedad Española de Física  
**Type of event:** Conference **Geographical area:** Non EU International  
**Type of participation:** Participatory - oral communication  
**City of event:** Santiago de Compostela, Spain  
**Date of event:** 17/07/2017  
**End date:** 21/07/2017  
**Organising entity:** REAL SOCIEDAD ESPAÑOLA DE FISICA  
**With external admission assessment committee:** Yes  
Carlos Sabín.



- 8** **Title of the work:** Dynamical Casimir Effect as a resource for boson sampling architectures  
**Name of the conference:** ICE-4 Conference on Quantum Information in Spain  
**Type of event:** Conference **Geographical area:** Non EU International  
**Type of participation:** Participatory - oral communication  
**City of event:** Madrid, Community of Madrid, Spain  
**Date of event:** 13/07/2017  
**Organising entity:** Centro de Ciencias de Benasque Pedro Pascual  
**With external admission assessment committee:** Yes  
Carlos Sabín.
- 9** **Title of the work:** Wormhole spacetimes with SQUID arrays  
**Name of the conference:** ICE-3 Conference on Quantum Information in Spain  
**Type of event:** Conference **Geographical area:** Non EU International  
**Type of participation:** Participatory - oral communication  
**City of event:** Palma de Mallorca, Balearic Islands, Spain  
**Date of event:** 13/04/2016  
**End date:** 15/04/2016  
**Organising entity:** Universidad de las Islas Baleares **Type of entity:** University  
**City organizing entity:** Palma de Mallorca, Balearic Islands, Spain  
**With external admission assessment committee:** Yes  
Carlos Sabín.
- 10** **Title of the work:** Quantum simulation of relativistic motion with superconducting circuits  
**Name of the conference:** 8th Madrid Meeting on Ultracold atoms  
**Type of event:** Training Session **Geographical area:** European Union  
**Type of participation:** Participatory - oral communication  
**City of event:** Madrid, Community of Madrid, Spain  
**Date of event:** 11/01/2016  
**End date:** 11/01/2016  
**Organising entity:** Universidad Complutense de Madrid **Type of entity:** University  
**City organizing entity:** Madrid, Community of Madrid, Spain  
Carlos Sabín.
- 11** **Title of the work:** Relativistic physics with superconducting circuits  
**Name of the conference:** Quantum simulation: theory meets experiment  
**Type of event:** Conference **Geographical area:** Non EU International  
**Type of participation:** Participatory - invited / keynote talk  
**City of event:** Oxford, United Kingdom  
**Date of event:** 30/10/2015  
**End date:** 31/10/2015  
**Organising entity:** Universidad de Oxford **Type of entity:** University  
**City organizing entity:** Oxford, United Kingdom  
**With external admission assessment committee:** Yes  
Carlos Sabín.
- 12** **Title of the work:** Quantum simulation of gravitational waves  
**Name of the conference:** International Workshop on Quantum Simulations  
**City of event:** Bensque, Spain  
**Date of event:** 23/02/2015  
**End date:** 26/02/2015



- 13** **Title of the work:** Gravitational wave detection with Bose-Einstein condensates  
**Name of the conference:** 7th Madrid Meeting on Ultracold Atoms  
**City of event:** Madrid, Community of Madrid, Spain  
**Date of event:** 17/10/2014  
**Organising entity:** Consejo Superior de Investigaciones Científicas  
**Type of entity:** State agency  
Carlos Sábín.
- 14** **Title of the work:** Relativistic Quantum Information and Computation with superconducting circuits  
**Name of the conference:** International Workshop on Quantum Simulations  
**City of event:** Benasque, Aragon, Spain  
**Date of event:** 29/09/2014  
**End date:** 03/10/2014  
Carlos Sábín.
- 15** **Title of the work:** Gravitational wave detection with relativistic quantum metrology  
**Name of the conference:** 7th International Workshop DICE  
**City of event:** Castiglioncello, Italy  
**Date of event:** 15/09/2014  
**End date:** 19/09/2014  
Carlos Sábín.
- 16** **Title of the work:** On-chip teleportation in motion  
**Name of the conference:** Topical Research Meetings on Physics: Quantum technologies: taking concepts through implementations  
**City of event:** Londres, United Kingdom  
**Date of event:** 17/12/2012  
**End date:** 18/12/2012  
Carlos Sábín.
- 17** **Title of the work:** Testing quantum foundations with circuit QED  
**Name of the conference:** International Workshop on Quantum Simulations  
**City of event:** Bilbao, Basque Country, Spain  
**Date of event:** 22/10/2012  
**End date:** 25/10/2012  
**Organising entity:** Universidad del País Vasco  
**Type of entity:** University  
Carlos Sábín.
- 18** **Title of the work:** On-chip extraction of quantum correlations from the vacuum  
**Name of the conference:** International Workshop on Relativistic Quantum Information-North  
**City of event:** Waterloo, Canada  
**Date of event:** 25/06/2012  
**End date:** 28/06/2012  
**Organising entity:** Perimeter Institute  
Carlos Sábín.
- 19** **Title of the work:** Short-time quantum detection: probing quantum fluctuations  
**Name of the conference:** Quantum Malta 2012: fundamental problems in quantum physics  
**City of event:** Valetta, Malta  
**Date of event:** 24/04/2012



**End date:** 27/04/2012

Carlos Sabín.

- 20** **Title of the work:** From Zeno to Fermi: probing Quantum Field Theory with quantum circuits  
**Name of the conference:** International Workshop on Relativistic Quantum Information-North  
**City of event:** Madrid, Spain  
**Date of event:** 06/09/2011  
**End date:** 08/09/2011  
**Organising entity:** Consejo Superior de Investigaciones Científicas  
**Type of entity:** State agency  
Carlos Sabín.

- 21** **Title of the work:** The Fermi problem with quantum circuits  
**Name of the conference:** XVIII Central European Workshop on Quantum Optics  
**City of event:** Madrid, Spain  
**Date of event:** 30/05/2011  
**End date:** 03/06/2011  
Carlos Sabín.

- 22** **Title of the work:** The Fermi problem with quantum circuits  
**Name of the conference:** Quantum Science and Technologies  
**City of event:** Rovereto, Italy  
**Date of event:** 09/05/2011  
**End date:** 12/05/2011  
Carlos Sabín.

- 23** **Title of the work:** Majorana Hamiltonians  
**Name of the conference:** Quantum Simulations  
**City of event:** Benasque, Aragon, Spain  
**Date of event:** 28/02/2011  
**End date:** 05/03/2011  
Carlos Sabín.

- 24** **Title of the work:** Detecting vacuum self excitations: slow quantum anti- Zeno effect  
**Name of the conference:** Circuit QED for Quantum Information  
**City of event:** Bilbao, Spain  
**Date of event:** 16/11/2010  
**End date:** 17/11/2010  
Carlos Sabín.

- 25** **Title of the work:** Atom-Photon interactions beyond RWA: circuit QED in the ultrastrong coupling regime  
**Name of the conference:** XIII International Conference on Quantum Optics and Quantum Information  
**City of event:** Kiev, Ukraine  
**Date of event:** 28/05/2010  
**End date:** 01/06/2010  
Carlos Sabín.

- 26** **Title of the work:** Entanglement dynamics and single photons in circuit QED  
**Name of the conference:** SOLID-EuroSQIP Workshop  
**City of event:** Bilbao, Spain  
**Date of event:** 09/02/2010



**End date:** 11/02/2010

Carlos Sabín.

- 27 Title of the work:** Nonlocal generation of bipartite entanglement in nonsignaling systems  
**Name of the conference:** International Conference on Quantum Information Processing and Communication  
**City of event:** Roma, Italy  
**Date of event:** 21/09/2009  
**End date:** 25/09/2009  
Carlos Sabín.
- 28 Title of the work:** Birth, life and death of entanglement in two qubits: a quantum field theory approach to circuit QED  
**Name of the conference:** International Workshop Quantum Information and Solid State Systems  
**Date of event:** 05/08/2009  
**End date:** 07/08/2009  
Carlos Sabín.
- 29 Title of the work:** Entanglement and the light cone in atomic systems  
**Name of the conference:** International Workshop Causality in Quantum Physics: Philosophers and Physicists Share their Views,  
**City of event:** Madrid, Spain  
**Date of event:** 09/03/2009  
Carlos Sabín.
- 30 Title of the work:** Quantum correlations between causally disconnected parties  
**Name of the conference:** International Workshop on the mathematical foundations of quantum control and quantum information  
**City of event:** Madrid, Spain  
**Date of event:** 26/05/2008  
**End date:** 30/05/2008  
Carlos Sabín.

### Works submitted to national or international seminars, workshops and/or courses

- 1 Title of the work:** Divulgación científica en la era de la posverdad  
**Name of the event:** Redes y medios sociales para la divulgación de la ciencia  
**City of event:** Madrid, Community of Madrid, Spain  
**Date of event:** 21/10/2019  
**End date:** 22/10/2019  
**Organising entity:** Consejo Superior de Investigaciones Científicas  
**Type of entity:** State agency  
Carlos Sabín.
- 2 Title of the work:** No, la física cuántica no es eso  
**Name of the event:** XVIII Semana de la Ciencia y la Tecnología en Madrid  
**City of event:** Madrid, Community of Madrid, Spain  
**Date of event:** 16/11/2018  
**Organising entity:** Comunidad de Madrid  
**Type of entity:** Comunidad de Madrid  
Available on-line at: <<https://www.youtube.com/watch?v=NQWcop8E8wc&t=116s>>.



- 3** **Title of the work:** El computador cuántico 2.0  
**Name of the event:** XVII Semana de la Ciencia en Madrid  
**City of event:** Madrid, Community of Madrid, Spain  
**Date of event:** 17/11/2017  
**Organising entity:** Comunidad de Madrid **Type of entity:** Comunidad de Madrid  
Available on-line at: <<https://www.youtube.com/watch?v=jdgGlwoaVXQ&t=>>.
- 4** **Title of the work:** El computador cuántico  
**Name of the event:** XVI Semana de la Ciencia en Madrid  
**City of event:** Madrid, Community of Madrid, Spain  
**Date of event:** 10/11/2016  
**Organising entity:** Comunidad de Madrid **Type of entity:** Comunidad de Madrid  
Available on-line at: <<https://www.youtube.com/watch?v=1JeOMbVphKI>>.

## R&D management and participation in scientific committees

### Organization of R&D activities

- 1** **Title of the activity:** International Workshop on Relativistic Quantum Metrology  
**Type of activity:** Congreso Internacional **Geographical area:** Non EU International  
**Convening entity:** University of Nottingham  
**City convening entity:** Nottingham, United Kingdom  
**Start-End date:** 07/03/2014 - 08/03/2014
- 2** **Title of the activity:** International Workshop on Relativistic Quantum Information-North  
**Type of activity:** Congreso Internacional **Geographical area:** Non EU International  
**Convening entity:** University of Nottingham  
**City convening entity:** Nottingham, United Kingdom  
**Start-End date:** 24/06/2013 - 27/06/2013
- 3** **Title of the activity:** International Workshop "When Relativistic Quantum Information met Analogue Gravity"  
**Type of activity:** Congreso Internacional **Geographical area:** Non EU International  
**Convening entity:** University of Nottingham **Type of entity:** University  
**City convening entity:** Nottingham, United Kingdom  
**Start-End date:** 25/03/2013 - 26/03/2013

### Evaluation and revision of R&D projects and articles

- 1** **Name of the activity:** Individual evaluator  
**Performed tasks:** Evaluation of proposals  
**Entity where activity was carried out:** European Commission **Type of entity:** Public Research Body  
**Start date:** 05/2024
- 2** **Name of the activity:** External evaluator  
**Performed tasks:** Evaluation of grant proposal  
**Entity where activity was carried out:** FUNDACION SENECA AGENCIA DE CIENCIA Y TECNOLOGIA DE LA REGION DE MURCIA



**City of entity:** Region of Murcia, Spain

**Start date:** 12/2023

- 3 Name of the activity:** Monitor  
**Performed tasks:** Monitoring of project  
**Entity where activity was carried out:** European Commission  
**Type of entity:** Public Research Body  
**Start date:** 11/2023
- 4 Name of the activity:** Evaluator  
**Performed tasks:** Evaluation of applications for Ramón y Cajal contracts  
**Entity where activity was carried out:** Agencia Estatal de Investigación  
**Type of entity:** Public Research Body  
**City of entity:** Spain  
**Start date:** 05/2023
- 5 Name of the activity:** Peer reviewer  
**Performed tasks:** Review of proposal  
**Entity where activity was carried out:** Science and Technology Facilities Council (STFC)  
**Type of entity:** Research council  
**City of entity:** United Kingdom  
**Start date:** 05/2022
- 6 Name of the activity:** Reviewer  
**Performed tasks:** Review of research project proposal  
**Entity where activity was carried out:** Dutch Research Council  
**Type of entity:** Public Research Body  
**City of entity:** Holland  
**Start date:** 04/2020
- 7 Name of the activity:** Expert evaluation  
**Performed tasks:** Evaluation of grant proposal  
**Entity where activity was carried out:** National Science Center  
**City of entity:** Poland  
**Start date:** 03/2020

## Other achievements

### Stays in public or private R&D centres

- 1 Entity:** Institute for Quantum Computing Analytics, Forschungszentrum Jülich  
**Type of entity:** R&D Centre  
**City of entity:** Jülich, Germany  
**Start-End date:** 12/11/2023 - 15/11/2023  
**Goals of the stay:** Guest  
**Provable tasks:** Talk "Quantum simulation of quantum field theories"  
**Type of stay:** Investigación



- 2** **Entity:** Universidad del País Vasco **Type of entity:** University  
**Faculty, institute or centre:** Facultad de Ciencia y Tecnología  
**City of entity:** Bilbao, Basque Country, Spain  
**Start-End date:** 16/10/2016 - 19/10/2016  
**Goals of the stay:** Guest
- 3** **Entity:** Harvard University **Type of entity:** University  
**Faculty, institute or centre:** Department of Chemistry & Chemical Biology  
**City of entity:** Cambridge, United States of America  
**Start-End date:** 29/08/2016 - 02/09/2016  
**Goals of the stay:** Guest
- 4** **Entity:** Universidad de Viena **Type of entity:** University  
**Faculty, institute or centre:** Facultad de Física  
**City of entity:** Viena, Austria  
**Start-End date:** 10/03/2016 - 11/03/2016 **Duration:** 1 day  
**Goals of the stay:** Guest  
**Provable tasks:** Reunión discusión de inicio de proyecto "Leaps in cosmology: gravitational wave detection with quantum systems" y charla "The GW detector at finite temperatures"
- 5** **Entity:** Instituto de Ciencia de Materiales de Aragón **Type of entity:** State agency  
**City of entity:** Zaragoza, Aragon, Spain  
**Start-End date:** 09/02/2016 - 09/02/2016 **Duration:** 1 day  
**Goals of the stay:** Guest  
**Provable tasks:** Charla "Relativistic physics with superconducting circuits" dentro del ciclo de seminarios "Martes cuanticos "
- 6** **Entity:** Universidad del País Vasco **Type of entity:** University  
**Faculty, institute or centre:** Facultad de Ciencia y Tecnología  
**City of entity:** Bilbao, Basque Country, Spain  
**Start-End date:** 18/10/2015 - 20/10/2015 **Duration:** 2 days  
**Goals of the stay:** Guest  
**Provable tasks:** Visita al grupo QUTIS del Prof. Enrique Solano y charla "Quantum estimation via parametric amplification in circuit QED arrays"
- 7** **Entity:** Universidad del País Vasco **Type of entity:** University  
**Faculty, institute or centre:** Facultad de Ciencia y Tecnología  
**City of entity:** Bilbao, Basque Country, Spain  
**Start-End date:** 11/05/2015 - 15/05/2015 **Duration:** 5 days  
**Goals of the stay:** Guest  
**Provable tasks:** Visita grupo QUTIS del Prof. Enrique Solano
- 8** **Entity:** Universidad Nacional Autónoma de México **Type of entity:** University  
**Faculty, institute or centre:** IIMAS  
**City of entity:** Ciudad de México, Mexico  
**Start-End date:** 24/08/2014 - 01/09/2014  
**Goals of the stay:** Guest  
**Provable tasks:** Curso sobre "Relativistic quantum Information" 28-29-Agosto 2014



- 9** **Entity:** LENS/QSTAR **Type of entity:** Public Research Body  
**City of entity:** Florencia, Italy  
**Start-End date:** 07/04/2014 - 10/04/2014 **Duration:** 3 days  
**Goals of the stay:** Guest  
**Provable tasks:** Visita Prof. Augusto Smerzi y seminario "Relativistic quantum clocks"
- 10** **Entity:** Consejo Superior de Investigaciones Científicas **Type of entity:** State agency  
**Faculty, institute or centre:** INSTITUTO DE FISICA FUNDAMENTAL  
**City of entity:** Madrid, Community of Madrid, Spain  
**Start-End date:** 20/10/2013 - 27/10/2013  
**Goals of the stay:** Guest  
**Provable tasks:** Curso "Relativistic quantum metrology" dentro de 4th Quarter lectures on Quantum Field Theory for Quantum Information 22-24/10/2013
- 11** **Entity:** Chalmers University of Technology **Type of entity:** University  
**City of entity:** Gotemburgo, Sweden  
**Start-End date:** 09/09/2013 - 11/09/2013 **Duration:** 3 days  
**Goals of the stay:** Guest  
**Provable tasks:** Visita grupos Prof. Göran Johansson y Prof. Per Delsing
- 12** **Entity:** Chalmers University of Technology **Type of entity:** University  
**City of entity:** Gotemburgo, Sweden  
**Start-End date:** 05/02/2013 - 08/02/2013  
**Goals of the stay:** Guest  
**Provable tasks:** Charla "Quantum Information out of the vacuum" 07/02/2013
- 13** **Entity:** Universidad del País Vasco **Type of entity:** University  
**Faculty, institute or centre:** Facultad de Ciencia y Tecnología  
**City of entity:** Bilbao, Basque Country, Spain  
**Start-End date:** 12/02/2012 - 23/02/2012 **Duration:** 11 days  
**Goals of the stay:** Guest  
**Provable tasks:** Visita al grupo QUTIS del Prof. Enrique Solano
- 14** **Entity:** Universidad Carlos III de Madrid **Type of entity:** University  
**Faculty, institute or centre:** Departamento de Física  
**City of entity:** Madrid,  
**Start date:** 21/03/2024  
**Goals of the stay:** Guest  
**Provable tasks:** Seminar "Quantum simulation of quantum field theories"  
**Type of stay:** Investigación
- 15** **Entity:** Centro de Física Miguel Antonio Catalán **Type of entity:** State agency  
**Faculty, institute or centre:** Instituto de Estructura de la Materia (CSIC)  
**City of entity:** Madrid, Community of Madrid, Spain  
**Start date:** 28/03/2019  
**Goals of the stay:** Guest  
**Provable tasks:** Charla "Quantum simulation of traversable wormholes and exotic spacetimes" dentro del ciclo "De Madrid al cosmos"



- 16** **Entity:** Centro de Investigaciones Biológicas **Type of entity:** State agency  
**City of entity:** Madrid, Community of Madrid, Spain  
**Start date:** 22/03/2019  
**Goals of the stay:** Guest  
**Provable tasks:** Seminario "Introduction to quantum computing"

### Editorial councils

- 1** **Name of the editorial council:** Revista Española de Física  
**Affiliation entity:** REAL SOCIEDAD ESPAÑOLA DE FISICA  
**Start date:** 2018
- 2** **Name of the editorial council:** Scientific Reports  
**Affiliation entity:** Nature Publishing Group  
**City affiliation entity:** LondresLondres, United Kingdom  
**Start date:** 2015

### Periods of research activity and knowledge transfer

- 1** **Name of the action:** CNEAI Six-year research evaluation  
**Certifying entity:** Agencia Nacional de Evaluación de la Calidad y Acreditación **Type of entity:** Spanish Agency of Evaluation  
**City certifying entity:** Spain  
**Date of recognition:** 03/07/2023  
**Six-year period of active research:** Yes  
**Type of activity:** Research  
**Starting year:** 2011  
**Completion date:** 2016  
**Evaluation period:** 2011, 2012, 2013, 2014, 2015, 2016  
**Call year:** 2023
- 2** **Name of the action:** CNEAI Six-year research evaluation  
**Certifying entity:** Agencia Nacional de Evaluación de la Calidad y Acreditación **Type of entity:** Spanish Agency of Evaluation  
**Date of recognition:** 03/07/2023  
**Six-year period of active research:** Yes  
**Starting year:** 2017  
**Completion date:** 2022  
**Evaluation period:** 2017, 2018, 2019, 2020, 2021, 2022  
**Call year:** 2023



## Obtained accreditations/recognitions

- 1** **Description:** Evaluación positiva Profesor Titular  
**Accrediting entity:** Agencia Nacional de Evaluación de la Calidad y Acreditación **Type of entity:** Spanish Agency of Evaluation of the Quality and Accreditation  
**Date of recognition:** 10/06/2025
- 2** **Description:** Certificación I3  
**Accrediting entity:** Agencia Nacional de Evaluación de la Calidad y Acreditación **Type of entity:** Agencia Nacional de Evaluación de la Calidad y Acreditación  
**Date of recognition:** 23/01/2020
- 3** **Description:** Evaluación positiva profesor contratado doctor  
**Accrediting entity:** Agencia Nacional de Evaluación de la Calidad y Acreditación **Type of entity:** Agencia nacional de evaluación de la calidad y acreditación  
**Date of recognition:** 19/11/2019
- 4** **Description:** Evaluación positiva profesor universidad privada  
**Accrediting entity:** Agencia Nacional de Evaluación de la Calidad y Acreditación **Type of entity:** Agencia nacional de evaluación de la calidad y acreditación  
**Date of recognition:** 19/11/2019
- 5** **Description:** Evaluación positiva acreditación como profesor ayudante doctor  
**Accrediting entity:** Agencia Nacional de Evaluación de la Calidad y Acreditación **Type of entity:** Agencia Nacional de evaluación de la calidad y acreditación  
**Date of recognition:** 26/10/2016

## Summary of other achievements

- 1** **Description of the achievement:** Organizador Ciclo de Coloquios "Marie Sklodowska-Curie"
- 2** **Description of the achievement:** Organizador del IFF en "Semana de la Ciencia y la Tecnología 2017"
- 3** **Description of the achievement:** Referee de unas 30 revistas internacionales, incluyendo las más prestigiosas de mi campo: Physical Review Letters, Physical Review, Scientific Reports, New Journal of Physics etc.