Juan Manuel Pérez Pardo

Curriculum Vitae

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Madrid, Spain 28911
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Positions

Current

12/2022 – **Associate Professor (Profesor Titular de Universidad)**. *Universidad Carlos III de Madrid (UC3M), Departamento de Matemáticas*. Leganés, Madrid, Spain.

Previous

04/2019 – 11/2022 **Assistant Professor (Profesor Ayudante Doctor)**. *Universidad Carlos III de Madrid (UC3M), Departamento de Matemáticas*. Leganés, Madrid, Spain.

04/2018 – 03/2019 **Juan de la Cierva Postdoctoral Researcher**. *Universidad Carlos III de Madrid (UC3M), Departamento de Matemáticas*. Leganés, Madrid, Spain.

06/2016 – 03/2018 **QUITEMAD+ Postdoctoral Researcher**. *Universidad Carlos III de Madrid (UC3M), Departamento de Matemáticas*. Leganés, Madrid, Spain.

06/2014 – 06/2016 **INFN Postdoctoral Researcher**. *Istituto Nazionale di Fisica Nucleare (INFN), Sezione di Napoli*. Naples, Italy.

11/2013 – 06/2014 **Postdoctoral Researcher**. *Instituto de Ciencias Matemáticas (ICMAT)*. Madrid, Spain.

09/2009 – 10/2013 **Teaching Assistant**. *Departamento de Matemáticas, Universidad Carlos III de Madrid*. Madrid, Spain.

Education

2009 – October 2013 **PhD in Mathematics**. Universidad Carlos III de Madrid. PhD Thesis: On the theory of self-adjoint extensions of the Laplace-Beltrami operator, quadratic forms and symmetry. Advisors: Alberto Ibort and Fernando Lledó.
Honors: Special award of the PhD program, International Mention.

2009 – 2011 **Master en ingeniería matemática. [Master degree in mathematical engineering]**. Universidad Carlos III de Madrid. Master Thesis: On the Self-Adjoint Extensions of the Laplace-Beltrami operator: Analytic and Numerical Aspects. Advisor: Alberto Ibort.
Honors: Special award of Master in mathematical engineering.

2007 – 2008 **Master en física fundamental. [Master degree in Theoretical Physics]**. Universidad Complutense de Madrid. Master Thesis: Quantum Control and Representation Theory. Advisor: Alberto Ibort.

2002 – 2008 **Licenciado en física. [Bachelor degree in Physics]**. Universidad Complutense de Madrid.

Publications

[27] A. Balmaseda, D. Lonigro and J.M. Pérez-Pardo. *On global approximate controllability of a quantum particle in a box by moving walls*. **SIAM Journal on Control and Optimization 62** 2, 826-852. (2024).
doi: 10.1137/22M1518980.

[26] J.M. Pérez-Pardo. *On Uhlmann's proof of the Monotonicity of the Relative Entropy*. **In Particles, Fields and Topology. World Scientific**. (2023).
doi: 10.1142/13251.

[25] A. Balmaseda, D. Lonigro and J.M. Pérez-Pardo. *Quantum controllability on graph-like manifolds through magnetic potentials and boundary conditions*. **J. Phys. A: Math. Theor 56** 32, 325201. (2023).
doi: 10.1088/1751-8121/ace505.

[24] A. Balmaseda, D. Lonigro and J.M. Pérez-Pardo. *On the Schrödinger Equation for Time-Dependent Hamiltonians with a Constant Form Domain*. **Mathematics 2022** 10, 218. (2022).
doi: 10.3390/math10020218.

[23] A. Ibort, J.G. Llavona, F. Lledó and J.M. Pérez-Pardo. *Representation of non-semibounded quadratic forms and orthogonal additivity*. **J. Math. Anal. Appl 495** 2, 124783. (2021).
doi: 10.1016/j.jmaa.2020.124783.

[22] A. Balmaseda, F. di Cosmo and J.M. Pérez-Pardo. *On Z-Invariant Self-Adjoint Extensions of the Laplacian on Quantum Circuits*. **Symmetry 11** 8, 1047. (2019).
doi: 10.3390/sym11081047.

[21] A. Balmaseda and J.M. Pérez-Pardo. *Quantum Control at the Boundary*. **Classical and Quantum Physics. Springer Proceedings in Physics 229**. (2019).
doi: 10.1007/978-3-030-24748-5.

[20] F.M. Ciaglia, G. Marmo and J.M. Pérez-Pardo. *Generalised Potential Functions in Differential Geometry and Information Geometry*. **Int. J. Geom. Methods Mod. Phys 16** Supp. 1, 1940002. (2019).
doi: 10.1142/S0219887819400024.

[19] F. Di Cosmo, G. Marmo, J.M. Pérez-Pardo and A. Zampini. *A Hodge - De Rham Dirac operator on the quantum SU(2)*. **Int. J. Geom. Methods Mod. Phys 15** 02, 1850030. (2018).
doi: 10.1142/S0219887818500305.

[18] F.M. Ciaglia, F. Di Cosmo, D. Felice, S. Mancini, G. Marmo and J.M. Pérez-Pardo. *Aspects of Geodesical motion with Fisher-Rao metric: classical and quantum*. **Open Systems & Information Dynamics 25** 1. (2018).
doi: 10.1142/S1230161218500051.

[17] S. Pascazio, F.V. Pepe and J.M. Pérez-Pardo. *Huygens' principle and Dirac-Weyl equation*. **Eur. Phys. J. Plus 132** 287. (2017).
doi: 10.1140/epjp/i2017-11593-6.

[16] J.M. Pérez-Pardo. *Dirac-like operators on the Hilbert space of differential forms on manifolds with boundaries*. **Int. J. Geom. Methods Mod. Phys 14** 8. (2017).
doi: 10.1142/S0219887817400047.

[15] F.M. Ciaglia, F. Di Cosmo, D. Felice, S. Mancini, G. Marmo and J.M. Pérez-Pardo. *Hamilton-Jacobi approach to Potential Functions in Information Geometry*. **J. Math. Phys. 58**, 063506. (2017).
doi: 10.1063/1.4984941.

[14] A. López-Yela and J.M. Pérez-Pardo. *Finite element method to solve the spectral problem for arbitrary self-adjoint extensions of the Laplace-Beltrami operator on manifolds with a boundary*. **J. Comp. Phys 347** C, 235-260. (2017).
doi: 10.1016/j.jcp.2017.06.043.

[13] P. Aniello, F.M. Ciaglia, F. Di Cosmo, G. Marmo and J.M. Pérez-Pardo. *Time, classical and quantum*. **Ann. Phys 373**, 532-543. (2016).
doi: 10.1016/j.aop.2016.08.001.

[12] M. Asorey, A.P. Balachandran and J.M. Pérez-Pardo. *Edge States at Phase Boundaries and Their Stability*. **Rev. Math. Phys. 28** 09, 1650020. (2016).
doi: 10.1142/S0129055X16500203.

[11] J.M. Pérez-Pardo, M. Barbero-Liñán and A. Ibort. *Boundary dynamics and topology change in quantum mechanics*. **Int. J. Geom. Methods in Modern Phys. 12**, 1560011. (2015).
doi: 10.1142/S0219887815600117.

[10] A. Ibort and J.M. Pérez-Pardo. *On the theory of self-adjoint extensions of symmetric operators and its applications to Quantum Physics*. **Int. J. Geom. Methods Mod. Phys 12**, 1560005. (2015).
doi: 10.1142/S0219887815600051.

[9] A. Ibort, F. Lledó and J.M. Pérez-Pardo. *Self-Adjoint Extensions of the Laplace-Beltrami Operator and unitaries at the boundary*. **J. Funct. Anal 268**, 634-670. (2015).
doi: 10.1016/j.jfa.2014.10.013.

[8] A. Ibort, F. Lledó and J.M. Pérez-Pardo. *On self-adjoint extensions and symmetries in Quantum Mechanics*. **Ann. Henri Poincaré 16** 10, 2367-2397. (2015).
doi: 10.1007/s00023-014-0379-4.

[7] A. Ibort, G. Marmo and J.M. Pérez-Pardo. *Boundary Dynamics Driven Entanglement*. **J. Phy. A: Math. Theor 47**, 385301. (2014).
Highlighted in Europhysics News 45/5. doi: 10.1088/1751-8113/47/38/385301.

[6] M. Asorey, A.P. Balachandran and J.M. Pérez-Pardo. *Edge States: Topological Insulators, Superconductors and QCD Chiral Bags*. **J. High Energ. Phys 2013** 12, 073. (2013).
doi: 10.1007/JHEP12(2013)073.

[5] J.M. Pérez-Pardo. *Quadratic Forms, Unbounded Self-Adjoint Operators and Quantum Observables*. **Nuovo Cimento C 36** 3, 205-214. (2013).
doi: 10.1393/ncc/i2013-11533-3.

[4] A. Ibort and J.M. Pérez-Pardo. *Numerical Solutions of the Spectral Problem for Arbitrary Self-Adjoint Extensions of the One-Dimensional Schrödinger Equation*. **SIAM J. Numer. Anal 51** 2, 1254-1279. (2013).
doi: 10.1137/110856800.

[3] A. Ibort and J.M. Pérez-Pardo. *Quantum Control and Representation Theory*. **J. Phys. A: Math. Theor 42**, 205301. (2009).
doi: 10.1088/1751-8113/42/20/205301.

[2] A. Balmaseda, D. Lonigro and J.M. Pérez-Pardo. *Global approximate controllability of quantum systems by form perturbations and applications*. **arXiv:2402.02955**. (2024).
arXiv: 2402.02955.

[1] A. Balmaseda, D. Lonigro and J.M. Pérez-Pardo. *On a sharper bound on the stability of non-autonomous Schrödinger equations and applications to quantum control*. **arXiv:2306.10203**. (2023).
arXiv: 2306.10203.

Conference Addresses and other Contributions

June 2023 Journées QUACO 2023. **Invited Speaker**. Title: "On the stability of the Schrödinger equation and applications to Quantum Control". *Laboratoire Jacques-Louis Lions, Sorbonne Université (Paris 6), France*.

June 2023 VI International Workshop on Information Geometry, Quantum Mechanics and Applications 2023. **Invited Speaker**. Title: "On the stability of the Schrödinger equation and applications to Quantum Control". *Policeta - San Rufo, Salerno, Italy*.

July 2022 Mathematical aspects of the Physics with non-self-Adjoint Operators. **Invited Speaker**. Title: "Controllability on Infinite Dimensional Quantum Systems". *Banff International Research Station, Canada*.

June 2022 Quantum Theory and Applications 2022. **Invited Speaker**. Title: "Dirac Operator on the Moebius Strip". *Policeta, Italy*.

January 2022 Sesión Especial Geometry, Mechanics and Control; Congreso Bienal de la Real Sociedad Matemática Española 2022. **Invited Speaker**. Title: "Controllability of infinite dimensional quantum systems based on Quantum Graphs". *Ciudad Real, Spain*.

June 2021 52 Symposium on Mathematical Physics: 'Channels, Maps and All That'. **Invited Speaker**. Title: "Controllability of infinite dimensional quantum systems based on Quantum Graphs". *Nicolaus Copernicus University, Toruń, Poland (Online)*.

February 2021 Mathematical Aspects of Physics with Non-Self-Adjoint Operators: 10 Years After. **Contributed Talk**. Title: "Quantum controllability of infinite dimensional quantum systems based on Quantum Graphs". *Centre International de Rencontres Mathématiques, Marseille, France*.

February 2020 IV International Workshop on Information Geometry, Quantum Mechanics and Applications 2020. **Invited Speaker**. Title: "On Uhlmann's proof of the monotonicity of the relative entropy for CPTP maps". *Universidad Carlos III de Madrid (Leganés), Spain*.

June 2019 III International Workshop on Information Geometry, Quantum Mechanics and Applications. **Invited Speaker**. Title: "On Uhlmann's definition of relative entropy". *Grajera (Segovia), Spain*.

November 2018 Noncommutative Geometry: Physical and Mathematical Aspects of Quantum Space-Time and Matter. **Invited Speaker**. Title: "Quantum control and approximate controllability of infinite dimensional quantum systems". *S.N. Bose National Centre for Basic Sciences, Kolkata, India*.

September 2018 XXVII International Fall Workshop on Geometry and Physics. **Invited Speaker**. Title: "Quantum Control on the boundary". *IMUS, Universidad de Sevilla, Spain*.

March 2018 Classical and Quantum Physics: Geometry, Dynamics and Control. **Invited Speaker**. Title: "Quantum Control at the boundary". *ICMAT, Madrid, Spain*.

February 2018 Function Theory on Infinite Dimensional Spaces XV. **Plenary Speaker**. Title: "Representation of unbounded quadratic forms and orthogonal additivity". *Universidad Complutense de Madrid, Spain*.

January 2018 Quantum Physics: Fields, Particles and Information Geometry. **Invited Speaker**. Title: "Edge States on Quantum Systems". *Dublin Institute for Advanced Studies, Ireland*.

September 2017 XXVI International Fall Workshop on Geometry and Physics. **Contributed Talk**. Title: "Hamilton-Jacobi approach to contrast functions and geodetical motion in information geometry". *University of Minho, Braga, Portugal*.

February 2017 V International Workshop on Foundations of Quantum Mechanics and Applications. **Plenary speaker**. Title: "An Introduction to Information Geometry". *ICMAT, Madrid, Spain*.

September 2016 XXV International Fall Workshop on Geometry and Physics. **Contributed Talk**. Title: "Quantum Mechanics and Information Geometry". *Consejo Superior de Investigaciones Científicas, Madrid, Spain*.

February 2016 International Workshop on Quantum Physics: Foundations and Applications. **Plenary speaker**. Title: "Laplacians and Dirac-like operators on the Hilbert space of differential forms on manifolds with boundaries". *Center for High Energy Physics, Indian Institute of Science, Bangalore, India*.

June 2015 Workshop on Mathematical Structure and Foundations of Quantum Physics. **Plenary speaker**. Title: "Boundary conditions and topology change in Quantum Mechanics". *Universidad de los Andes, Bogotá, Colombia*.

February 2015 International Workshop on Quantum Physics: Foundations and Applications. **Plenary speaker**. Title: "Self-adjoint extensions on the Hilbert space of differential forms". *National Institute for Theoretical Physics, Wallenberg Research Centre, Stellenbosch, South Africa*.

October 2014 Seminario Gruppo IV. **Invited Speaker**. Title: "Boundary dynamics and topology change in Quantum Mechanics". *INFN, Sezione di Napoli*.

September 2014 XXIII Fall Workshop on Geometry and Physics. **Plenary speaker**. Title: "Boundary dynamics and topology change in Quantum Mechanics". *Universidad de Granada*.

July 2014 First Joint International Meeting RSME-SCM-SEMA-SIMAI-UMI. Special session in Operator Algebras and applications to Quantum Physics. **Invited speaker**. Title: "Quantum symmetries, self-adjoint extensions and reduction theory". *Universidad del Pais Vasco, Bilbao*.

February 2014 International Workshop on Mathematical Structures in Quantum Physics and Applications. **Plenary speaker**. Title: "Quadratic Forms and Self-adjoint extensions. Kato's Theorem and Friedrichs' extensions". *Center for High Energy Physics, Indian Institute of Science, Bangalore, India*.

July 2012 Conference on Mathematical Structures in Quantum Systems and Applications. **Invited speaker**. Title: "Quadratic Forms, unbounded Self–Adjoint Operators and Self–Adjoint Extensions of the Laplace–Beltrami Operator". *Centro de Ciencias de Benasque "Pedro Pascual", Spain*.

2011 Seminario Intergrupos del Departamento de Matemáticas, sesión junior. **Contributed Talk**. Title: "Quadratic Forms and self–adjoint extensions of the Laplace–Beltrami Operator". *Universidad Carlos III de Madrid*.

July 2011 Kolloquium des Graduiertenkollegs. **Contributed Talk**. Title: "Quadratic Forms and general self–adjoint extensions of the Laplace–Beltrami Operator". *Georg-August-Universitaet Goettingen, Germany*.

December 2010 QUITEMAD Workshop. **Contributed Talk**. Title: "Quadratic Forms and general self–adjoint extensions of the Laplace–Beltrami Operator". *Centro Universitario María Cristina, El Escorial, Spain*.

December 2010 Group of Applied Mathematical Analysis. **Invited speaker**. Title: "Quadratic Forms and general self–adjoint extensions of the Laplace–Beltrami Operator". *Universidad Carlos III de Madrid, Spain*.

September 2010 Workshop of Young Researchers in Mathematics 2010. **Invited speaker**. Title: "Quadratic Forms and general self–adjoint extensions of the Laplace–Beltrami Operator". *Universidad Complutense de Madrid, Spain*.

May 2010 Jornada MTM2010. **Contributed Talk**. Title: "Quadratic Forms and general self–adjoint extensions of the Laplace–Beltrami Operator". *ICMAT*.

January 2010 XII Encuentro de Invierno de Geometría, Mecánica y Teoría de Control. **Contributed Talk**. Title: "Self–Adjoint extensions of Schroedinger Operators and Numerics". *Universidad de Zaragoza, Spain*.

October 2009 Seminario de Información y Computación Cuántica. **Contributed Talk**. Title: "Control Cuántico y Teoría de Representaciones". *Universidad Complutense de Madrid*.

Scientific Service

March 2023 **Organisation:** V International Workshop on Information Geometry, Quantum Mechanics and Applications 2023. Universidad Carlos III de Madrid, Leganés, Spain. Held March 1st-4th 2023.

February 2020 **Organisation:** IV International Workshop on Information Geometry, Quantum Mechanics and Applications 2020. Universidad Carlos III de Madrid, Leganés, Spain. Held February 27th-28th 2020.

June 2019 **Organisation:** III International Workshop on Information Geometry, Quantum Mechanics and Applications. Grajera (Segovia), Spain. Held June 24th-28th 2019.

October 2018– **Organisation of Q-Math seminar.** Biweekly seminar held at UC3M and ICMAT.

March 2018 **Organisation:** Conference on Classical and Quantum Physics: Geometry, Dynamics and Control. ICMAT, Madrid, Spain. Held from March 5th 2018 to March 9th 2018.

February 2017 **Organisation:** V International Workshop on Foundations of Quantum Mechanics and Applications. ICMAT, Madrid, Spain. Held from January 30th 2017 to February 10th 2017.

2015– **Member of the editorial board:** International Journal of Geometric Methods in Modern Physics.

October 2013 – June 2014 **Organisation of Q-Math seminar.** Biweekly seminar held at UC3M and ICMAT.

Participation in Research Projects

01/09/2021 - 31/08/2025 **PID2020-117477GB-I00, Agencia Estatal de Investigación (AEI)**. Grupoides, Álgebras de von Neumann y los Fundamentos Matematicos De La Mecánica Cuántica: Teoría y Aplicaciones. *PR:* Luis Alberto Ibort Latre. Budget: €65.824,00.

01/09/2022 - 30/06/2023 **Cofinanciación Seminarios Severo Ochoa**. Seminario Q-Math. *PR:* J.M. Pérez-Pardo. Budget: €2400,00.

01/11/2021 - 31/12/2022 **CAM. Consejería de Educación e Investigación**. Classical and Quantum Information Theory and Functional Analysis: Foundations and applications. *PR:* Florio M. Ciaglia. Budget: €46.667,00.

01/01/2019 - 31/12/2022 **S2018/TCS-4342, CAM Consejería de Educación e Investigación**. Quantum Information Technologies Madrid, QUITEMAD. *PR:* Alberto Ibort. Budget: €99.317,45.

01/01/2019 - 31/12/2019 **Cofinanciación Seminarios Severo Ochoa**. Seminario Q-Math. *PR:* J.M. Pérez-Pardo. Budget: €2400,00.

01/01/2018 - 30/09/2021 **MTM2017-84098-P, Ministerio de Economía y Empresa**. Fundamentos Matemáticos de las tecnologías de la Información Cuánticas: Convexidad, Muestreo y Algebras de Operadores. *PR:* Luis Alberto Ibort Latre. Budget: €58.564,00.

01/01/2015 - 31/12/2017 **MTM2014-54692, Ministerio de Economía y Competitividad**. Mathematics and Quantum Information Theory: From operator Algebras to Quantum Sampling. *PR:* Luis Alberto Ibort Latre. Budget: €80.223,00.

01/01/2014 - 31/12/2018 **S2013/ICE-2801, Comunidad Autónoma de Madrid**. Quantum Information Technologies in Madrid +, QUITEMAD+. *PR:* Miguel Angel Martín-Delgado. Budget: €850.000,00.

01/01/2011 - 31/12/2014 **MTM2010-21186-C02-02, Ministerio de Ciencia e Innovación**. Estructuras globales y métodos numéricos, sistemas dinámicos y control: Aplicaciones cuánticas. *PR:* Luis Alberto Ibort Latre. Budget: €61.226,00.

01/01/2010- 31/05/2014 **S2009/ESP-1594, Consejería de Educación, Comunidad de Madrid**. Tecnologías de información cuánticas: criptografía, computación y simulación QUITEMAD. *PR:* Miguel Angel Martín-Delgado. Budget: €1.050.000,00.

01/01/2012 - 31/12/2012 **Workshops VI - 2012, Universidad Carlos III de Madrid**. International Workshop on Mathematical Properties of Quantum Systems and Applications. *PR:* Luis Alberto Ibort Latre. Budget: €375,00.

Referee / Reviewer

- Czech Science Foundation.
- European Journal of Physics Plus.
- Europhysics Letters.
- General Relativity and Gravitation.
- International Journal of Geometric Methods in Modern Physics.
- Mathematical Reviews.
- Reports on Mathematical Physics.

Awards and Honors

2018 - 2020 **Juan de la Cierva - Incorporación**. International application. Post-doctoral Fellowship.

2016 - 2018 **QUITEMAD+ Postdoctoral Fellowship**. Post-doctoral Fellowship at Department of Mathematics, Universidad Carlos III de Madrid.

2014 - 2016 **INFN Postdoctoral Fellowship**. Post-doctoral Fellowship at the Naples Section of "Istituto Nazionale di Fisica Nucleare" (INFN).

2014 **Highlight of the article:**. A. Ibort, G. Marmo, J.M. Pérez-Pardo. J. Phy. A: Math. Theor. 47 385301 (2014) in Europhysics News 45/5. It was also tagged as IOPselect by the editors of the Institute of Physics (collection of articles chosen by their novelty, significance and potential impact on future research).

2014 **Premio extraordinario de doctorado**. [Special award of the PhD program].

2012 **Ayuda a la movilidad de investigadores de la Universidad Carlos III 2012**. [Mobility grant for researchers at Universidad Carlos III de Madrid 2012].

2011 **Premio extraordinario de Master en Ingeniería Matemática**. [Special award of Master in mathematical engineering].

2011 **Ayuda a la movilidad de investigadores de la Universidad Carlos III 2011**. [Mobility grant for researchers at Universidad Carlos III de Madrid 2011].

International Research Experience

2021 **Czech Technical University in Prague**. *Prague, Czech Republic*. 2 weeks. Host: D. Krejcirik.

2017 **Università degli Studi di Napoli Federico II**. *Naples, Italy*. 1 week. Host: G. Marmo.

2014 **Istituto Nazionale di Fisica Nucleare (Sezione di Napoli)**. *Naples, Italy*. 24 months. Host: G. Marmo.

2012 **University of California, Berkeley**. *Berkeley, USA*. 2 months. Host: A. Weinstein.

2012 **Università degli Studi di Napoli Federico II**. *Naples, Italy*. 2 weeks. Host: G. Marmo.

2011 **Georg-August-Universitaet Goettingen**. *Goettingen, Germany*. 3 months. Hosts: D. Bahns and K.H. Rehren.

Teaching

Perspective over Computational and Applied Mathematics (MSc). Lecture Hours: **84**. Institution: Universidad Carlos III de Madrid.
2023, 2022, 2021.

Calculus. Lecture Hours: **118**. Institution: Universidad Carlos III de Madrid.
2023, 2019.

Vector Calculus. Lecture Hours: **412**. Institution: Universidad Carlos III de Madrid.
2020, 2019, 2018, 2017, 2013, 2012, 2011, 2010.

Espacios de Hilbert, Wavelets y Teoría de Muestreo (MSc). Lecture Hours: **21**. Institution: Universidad Carlos III de Madrid.
2020.

Numerical Methods in Biomedicine. Lecture Hours: **28**. Institution: Universidad Carlos III de Madrid.
2018.

Numerical Calculus Laboratory. Lecture Hours: **58**. Institution: Universidad Carlos III de Madrid.
2016.

Numerical Methods in Engineering. Lecture Hours: **89**. Institution: Universidad Carlos III de Madrid.
2011, 2010.

Fundamentos de Física: Dinámica y Calor. Lecture Hours: **90**. Institution: Universidad Complutense de Madrid.
2006.

Advising

PhD Students

Ángel Aitor Balmaseda Martín. Quantum Control at the Boundary. Start: September 2018. End: 26 November 2021.
Coadvisor: Alberto Ibort.

MSc Students

Fernando Bellido Pazos. BNumMet: A Scholar implementation of Numerical Methods in Python enhanced with interactive widgets. Start: September 2022. End: June 2023.

Jorge Gutiérrez. Modelling of Josephson Junctions and Superconducting Circuits based on Quantum Graphs. Start: September 2021. End: September 2023.

Ángel Aitor Balmaseda Martín. Quantum Control at the Boundary: an application to quantum circuits. Start: September 2017. End: September 2018.
Coadvisor: Alberto Ibort.

BSc Students

Eloy Fernández Bermejo. Numerical Solutions of the Optimal Control Problem in Quantum Mechanics. Start: January 2023. End: September 2023.

Juan Camilo Bucheli Victoria. Implementación de rutinas básicas de cálculo numérico de código libre con interfaz gráfica. Start: September 2019. End: September 2020.

Languages

	Reading	Listening	Speaking	Writing
German	C1	C1	C1	C1
English	C1	C1	C1	C1
Italian	B2	B2	B2	B1
Spanish	C2	C2	C2	C2

Programming Languages

- **Python**.
- **LaTeX**.
- **Matlab**.
- **Lua**.