MINISTERIO DE CIENCIA E INNOVACIÓN

Cofinanciado por la Unión Europea

AGENCIA ESTATAL DE INVESTIGACIÓN

**CURRICULUM VITAE (CVA)**

| **CV date** | 23/09/2026 |
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## Part A. PERSONAL INFORMATION

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|---|---|---|---|
| Name | MIGUEL ÁNGEL | | |
| Family name | SÁNCHEZ-CONDE | | |
| Gender (*) | Male | Birth date (dd/mm/yyyy) | 12/02/1980 |
| Social Security, Passport, ID | | XDB379428 | 79261672S |
| e-mail | miguel.sanchezconde@uam.es | URL Web: https://projects.ift.uam-csic.es/damasco/ | |
| Open Researcher and Contributor ID (ORCID) (*) | | 0000-0002-3849-9164 | |

### A.1. Current position

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|---|---|---|---|
| Position | Associate Professor (‘Profesor Contratado Doctor i3’) | | |
| Initial date | 01-06-2022 | | |
| Institution | Universidad Autónoma de Madrid (UAM) | | |
| Department/Center | Theoretical Physics Dpt. | Institute for Theoretical Physics (IFT) | |
| Country | Spain | Phone | +34912999867 |
| Key words | gamma rays, dark matter searches, particle astrophysics, dark matter halos, cosmological simulations | | |

### A.2. Previous positions

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|---|---|
| Mar 2017 – May 2022 | ‘Atracción de Talento mod.1’ tenure-track senior researcher Universidad Autónoma de Madrid and IFT UAM-CSIC |
| Sep 2014 – Feb 2017 | Postdoctoral researcher / Stockholm University / Sweden |
| Sep 2011 – Aug 2014 | Postdoctoral researcher / Stanford & SLAC / USA |
| Dec 2009 – Aug 2011 | Postdoc / Instituto de Astrofísica de Canarias / Spain |

### A.3. Education

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| PhD | Universidad de Granada | 2009 |
| M.Sc. | Universidad de Granada | 2007 |
| B.Sc. | Universidad de La Laguna | 2004 |

## Part B. CV SUMMARY

My main research focuses on the indirect detection of **dark matter** (DM) through **gamma-ray** telescopes, investigating DM candidates like WIMPs and Axion-Like Particles (ALPs). On the theoretical side, I use a combination of theoretical models, numerical **cosmological simulations**, and semi-analytical models to predict gamma-ray emissions from DM interactions. On the experimental side, I search for evidence of DM in gamma-ray data and set constraints on the nature of the DM particle when no signals are found. I began this work with the **MAGIC** Collaboration (2007-2010) and continued with the **Fermi-LAT** Collaboration (2011-present) and the Cherenkov Telescope Array Observatory (**CTAO**) Collaboration (2011-present). I play a major role in these collaborations, having served as **Science Coordinator of the entire Fermi-LAT Collaboration** between 2021-2023, having twice served as DM Coordinator (2014-2016, 2020-2022), and previously as the DM Coordinator for CTAO (2018-2020). I have also been a member of the **DESI** Collaboration since 2020. My research contributions are closely tied to these collaborations, where I have played a critical role in developing search strategies and analyzing gamma-ray data for DM detection. I have authored or co-authored **153 refereed papers**, with over **~20,500 citations** (ADS) and an **h-index of 66**, leading or co-leading 29 of these works. I have conducted ~50 research visits worldwide

and given **111 talks and colloquia (60 invited**) at international conferences and institutions, e.g., Stanford, Columbia, CalTech, UCLA, DESY, GRAPPA, Padova, Stockholm, and others.

On the management side, I serve as the **P.I. of the MultiDark Network** (2023-present) and previously **coordinated** the "Gamma rays and cosmic rays working group" of earlier MultiDark networks (2010-2020). I have been the **P.I. of five research grants** totaling ~€640,000 and **lead the DAMASCO research group** composed by several BSc/MSc/PhD students and postdocs. My role extends to organizing and chairing numerous conferences, with involvement in 20 national and international conferences as **SOC/LOC member and LOC chair** for several. I have also been a member of various seminar committees, including nowadays at my current institution. I regularly **referee** papers for high-impact journals like PRD, PRL, JCAP, ApJ, and MNRAS, and frequently serve as an internal referee for both Fermi and CTAO. Additionally, I assist national agencies in **evaluating research proposals** and have served on PhD defense **committees**, postdoc hiring panels, staff positions, and other academic tribunals.

I received my B.Sc. from the Universidad de **La Laguna** in 2004 and completed my **PhD in October 2009** at the **IAA-CSIC** and U. Granada. After a postdoc at the Instituto de Astrofísica de Canarias (**IAC**) (2010-2011), I moved to **KIPAC/SLAC, Stanford**. In September 2014, I was awarded the prestigious Wenner-Gren postdoc fellowship at the **Oskar Klein Centre**, Stockholm University. In March 2017, I joined **IFT UAM-CSIC** as a tenure-track senior researcher under the "Atracción de Talento" program, and in June 2022 I became an **Associate Professor** of the UAM Theoretical Physics Department, currently being the **co-head of the department** (since 2024) and the **Dean's Delegate for the BSc in Physics** (since 2025). I also **teach** at both the BSc and MSc levels. I have directly **supervised** 4 PhD theses (4 more PhD theses are ongoing), 17 MSc theses; 4 BSc theses, and several exchange MSc and Bsc students. I possess **three Spanish 'sexenios de investigación'**.

## Part C. RELEVANT MERITS

### C.1. Publications (including books)

153 refereed publications (29 led or co-led; 37/11/31 as a member of the Fermi-LAT / CTAO / MAGIC collabs.; 2 books and 1 book chapter; 1 review). 10 highlights in the last ten years:

[1] *Impact of baryons on the population of Galactic subhalos and implications for dark matter searches,* S. Porras-Bedmar, M.A. Sánchez-Conde, et al., 2026, PDU, 52, 102262
[5] *New insights on low-mass dark matter subhalo tidal tracks via numerical simulations*, A. Aguirre-Santaella, M.A. Sánchez-Conde, et al., 2026, MNRAS, 545, 2058
[3] *Prospects for gamma-ray observations of the Perseus galaxy cluster with the Cherenkov Telescope Array* (CTAO Collab.; Sánchez-Conde corresponding author), 2024, 10, 004
[4] *LCDM halo substructure properties revealed with high-resolution and large-volume cosmological simulations*, A. Moliné, M.A. Sánchez-Conde, et al., 2023, MNRAS, 518, 157
[5] *Shedding light on low-mass subhalo survival and annihilation luminosity with numerical simulations*, A. Aguirre-Santaella, M.A. Sánchez-Conde, et al., 2023, MNRAS, 518, 93
[6] *Spatial extension of dark subhalos as seen by Fermi LAT and the implications for WIMP constraints*, J. Coronado-Blazquez, M.A. Sánchez-Conde, et al., 2022, PRD, 105, 3006
[7] *Unidentified gamma-ray sources as targets for indirect dark matter detection with the Fermi LAT*, J. Coronado-Blazquez, M.A. Sánchez-Conde, et al., 2019, JCAP, 07, 020
[8] *Characterization of subhalo structural properties and implications for dark matter annihilation signals*, A. Moliné, M. A. Sánchez-Conde, et al., 2017, MNRAS, 466, 497
[9] *Search for Spectral Irregularities due to Photon-ALP-Particle Oscillations with Fermi LAT,* Ajello et al. (Fermi-LAT coll.; Sánchez-Conde corresponding author), 2016, PRL, 116, 161101
[10] *Sensitivity projections for dark matter searches with the Fermi Large Area Telescope,* E. Charles, M.A. Sánchez-Conde et al., 2016, Physics Reports, 636, 1

### C.2. Conferences, seminars…

63 oral contributions (39 invited); 16 posters; 53 seminars (20 invited). Highlights 2017-2026:

1. *"Indirect dark matter searches circa 2026: status and prospects.",* invited review, Identification of Dark Matter (IDM2026), Zaragoza, Spain, June 2026.
2. "Dark satellites as cosmological probes and gamma-ray dark matter searches", invited seminar, Instituto de Astrofísica de Canarias, La Laguna, Spain, January 2025.
3. "Dark satellites as cosmological probes and gamma-ray dark matter searches", invited

IFPU seminar, Trieste, Italy, November 2024

4. *"Gamma-ray dark matter searches circa 2022: status and future",* invited review, X Fundamental Cosmology Meeting, Seville, Spain, October 2024
5. *"The Fermi Large Area Telescope: status and recent results",* invited review, RICAP'24 international conference, Rome, Italy, September 2024
6. *"Unveiling the dark universe with the Fermi gamma-ray space telescope",* invited seminar, UCLA, USA, August 2024
7. *"Dark satellites as cosmological probes and gamma-ray dark matter searches",* invited talk, workshop "Next-gen $\gamma$-ray searches for DM", KICP / U. Chicago, USA, May 2023
8. *"Gamma-ray dark matter searches circa 2022: status and future",* invited review, European Astronomical Society (EAS) meeting, Valencia, Spain, June 2022
9. *"The search of dark satellites with gamma rays",* invited talk, A rainbow of dark sectors: ACP winter workshop, online, March 2021
10. *"The search for dark matter halo substructure with gamma rays",* invited talk, 14th Rencontres du Vietnam, Quy Nohn, Vietnam, August 2018

**C.3. Research projects and grants**

Participation in 17 funded projects in the past 10 years. Those with me as P.I. are below:

1. PID2021-125331NB-I00, "Particles, Astroparticles and Dark Matter in the Universe" (2025-2028). Agency: Spanish Ministry of Science and Innovation. Amount: 79.125€.
2. RED2022-134411-T, "MultiDark Network" (2023-2025). Agency: Ministerio de Ciencia e Innovación. Amount: 20.300€.
3. PID2021-125331NB-I00, "Particles, Astroparticles and Dark Matter in the Universe" (2022-2025). Agency: Spanish Ministry of Science and Innovation. Amount: 176.660€.
4. PGC2018-095161-B-I00, "Particles, Astroparticles and Dark Matter in the Universe" (2019-2021). Agency: Ministerio de Economía y Competitividad. Amount: 96.800€.
5. 2020-5A/TIC-19725. "Unveiling the nature of the dark matter in gamma rays" (2021-2022). Agency: Comunidad de Madrid regional Government. Amount: 30.000€.
6. 2016-T1/TIC-1542. "Unveiling the nature of the dark matter with the Fermi satellite" (2017-2021). Agency: Comunidad de Madrid regional Government. Amount: 304.100€.

**C.4. R&D management**

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| 2025 – now | Scientific coordinator of the 'Milky Way Survey' working group, Dark Energy Spectroscopic Instrument (DESI) Collaboration. |
| 2023 – 2025 | Science Coordinator of the entire NASA Fermi-LAT Collaboration. |
| 2020 – 2022 | Scientific coordinator of the 'Dark Matter and New Physics' working group, Fermi Large Area Telescope (Fermi-LAT) Collaboration |
| 2018 – 2020 | Scientific coordinator of the 'Dark Matter and Exotic Physics' working group, Cherenkov Telescope Array (CTA) Consortium |
| 2017 – 2020 | Scientific coordinator of the 'Gamma rays and cosmic rays dark matter detection' working group, 'MultiDark Consolider' Spanish Network. |
| 2015 – 2017 | Convener of the 'Dark Matter group', Oskar Klein Centre, Stockholm Univ. |
| 2014 – 2016 | Scientific coordinator of the 'Dark Matter and New Physics' working group, Fermi Large Area Telescope (Fermi-LAT) Collaboration |
| 2010 – 2017 | Scientific coordinator of the 'Gamma rays dark matter detection' working group, 'MultiDark Consolider' Spanish Project of Excellence. |

**C.5. Participation in scientific committees**

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| 2025 – now | Dean's Delegate for the BSc in Physics, Madrid Autonomous U. (UAM), Spain. |
| 2024 – now | Co-head of the UAM Department of Theoretical Physics. |
| 2022 – now | Evaluation committee member for staff positions, Spain, France. |
| 2021 – now | Member of the 'IFT seminars committee', IFT UAM-CSIC. |
| 2020 | Scientific Evaluator of the 'Discovery grants program', NSERC, Canada |
| 2018 – now | Guest Editor, 'Galaxies' MDPI peer-reviewed JCR journal |
| 2017 – now | Steering Committee, 'International School on Astroparticle Physics' (ISAPP) |

2015 – now Scientific Evaluator, Statal Research Agency (AEI), Spain
2013 – now Journal referee for *PRD, PRL, JCAP, MNRAS, Phys. Comm., ApJ.*
2012 Scientific Evaluator, NASA Fermi Guest Investigator Program, USA.
2011 – now Internal reviewer for both Fermi-LAT and CTAO collaborations.
2011 – now PhD thesis jury for several PhD students (4 in Spain and 6 abroad).

**C.7. Organization of R&D activities (last 10 years)**

SOC member of 8 international conferences; LOC member of ~19 workshops/conferences (LOC chair for 5): invited convener of 2 parallel sessions in major international conferences.
2026 LOC member: '23rd MultiDark meeting'; ; SOC member: '2nd UNDARK workshop'.
2025 LOC member: DRAGON school; SOC member: 'TAUP25'
2024 LOC chair: "AI goes MAD^2"; "RENATA & 21st MultiDark"; "Fermi-LAT 2024"
2024 SOC member: "9th Fermi Symposium"; "IAU meeting on luminous and dark galaxies"
2023 LOC member: 'COSMO23', 'TAUP23', '20th MultiDark; SOC member: 'TAUP23'
2022 SOC member: 'CTA Spanish Day'; LOC member: 'AI goes MAD', '17th IBS-MultiDark-ICTP', '28th Xmas IFT'
2021 SOC member, 'TAUP21' and LOC member, '27th Xmas IFT workshop', '16th IBS-MultiDark-IFT'
2021 LOC chair, 'ISAPP school: Gamma rays to shed light on dark matter', Madrid.
2020 LOC member, ''5th IBS-IFT-MultiDark workshop', online
2018 LOC chair, 'Halo substructure and dark matter searches' workshop, Madrid.
2018 Inviter convener of the dark matter session, TeVPA18, Berlin, Germany
2016 Inviter convener of the dark matter session, TeVPA16 CERN, Switzerland

**C.8. Teaching**

2025 – now 'Técnicas Experimentales Avanzadas', BSc Physics course – UAM, Spain
2023 – now 'Astrofísica y Cosmología', BSc Physics course – UAM, Spain
2021 – 2022 'Técnicas Experimentales 1' BSc Physics course – UAM, Spain
2019 – 2023 Coordinator of the 'Prácticas Externas' Physics degree course – UAM, Spain
2018 – 2023 'Técnicas Experimentales 3' BSc Physics course – UAM, Spain
2014 – now 'Astroparticles' master course – 'Master on Theoretical Physics', UAM, Spain
2015 – 2017 "Advance Problem Solving", BSc Physics course, Stockholm Univ., Sweden
2013 – now Invited lecturer: "TAE 2024" (2024), "MAGIC DM school" (2019), "1st Thai-CTA workshop" (2019), "HAP workshop on DM" (2014), "42 SLAC Summer Inst." (2014), "DM tools & Fermi tools" (2013)

**C.9. Supervision**

Leader of the 'DAMASCO' group, normally composed of ~7-8 PhD students and postdocs.
2017 – now PhD Supervisor: 4 PhD theses finalized and 4 ongoing.
2017 – now MSc Supervisor: 17 MSc theses finalized.
2021 – now BSc thesis supervisor: 4 BSc theses finalized.
2022 – now Supervisor of several 1-semester BSc and PhD internships in my group.

**C.10. Honors and awards**

- Member of the International Astronomical Union (IAU) (2020-).
- Member of the Spanish Astronomical Society (SEA) (2023-).
- Member of the NASA Fermi-LAT Collaboration (2011-). PI of the UAM-Madrid group.
- Member of the CTAO Collaboration (2011-). PI of the UAM-Madrid group.
- Member of the DESI Collaboration (2020-). PI of the UAM-Madrid group.
- Recipient of the "2013 Wennergren postdoc fellowships" – Stockholm U. (2014-2016).
- Recipient of the "2009 postdocs genéricos del IAC" – IAC, Spain (2009-2011).
- 'Best PhD theses' distinction by the Spanish Astronomical Society (SEA) (2009).
- I3P-CSIC Predoctoral Fellowship, IAA-CSIC, Spain (2006-2009).
- NASA Summer Student, STScI/NASA, Baltimore, MD, USA (2004).