



CVA date	30/7/2025
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Part A. PERSONAL INFORMATION

Name	Mikael Chala		
DNI/NIE/passport		Age	38
Researcher identification number	Researcher ID	AAB-4586-2019	
	Código Orcid	0000-0002-8194-1050	
	Scopus ID	54790628800	

A.1. Current position

Organism	Universidad de Granada		
Department/Centre	Dpto. Física Teórica y del Cosmos		
Address	Campus de Fuentenueva, 18071, Granada		
Telephone number	(+34) 958 - 241727	e-mail	mikael.chala@ugr.es
Caterogy	Profesor Titular	Initial date	2025
Keywords	high-energy physics – theory – phenomenology		

A.2. Education (degree, institution, date)

Bachelor/Master/PhD	University	Year
Bachelor	Universidad de Granada	2010
Master	Universidad de Granada	2011
PhD	Universidad de Granada	2014

A.3. General indicators of research quality

These numbers follow from iNSPIRE. Works within large collaborations are not included.

Number of PhD theses supervised in the laster 10 years: 3

Total citations: 3600

Average citations/year in the lsat 5 years: about 350

Publications in Q1: 50

h index: 35

Parte B. CV SUMMARY (maximum 5000 characters, including spaces)

I did my PhD in the University of Granada, finishing in 2014. During that period I worked on the collider phenomenology of beyond the Standard Model physics, being awarded the **extraordinary prize to the best PhD thesis** in Science (out of 93). My main achievement was building, as single author, a phenomenologically viable composite Higgs model (about **100 citations**).

After completing my PhD, I spent two months in the ETH of Zurich where I started working on the interplay between collider, dark matter and other cosmological signatures of new particles. During that time, I was also awarded the **first prize** in the V Outreach Contest organised by the Spanish CPAN in the category of "Outreach Articles". I moved then to DESY as postdoctoral fellow, where I became interested in the gravitational wave signals of phase transitions. My main accomplishments there comprise a study of the sensitivity of different experimental facilities to dark matter, which reshaped a good part of ATLAS and CMS searches, and a viable explanation for dark matter and baryogenesis within composite Higgs models (about **150 citations each**).

I resigned after two years to have a one-year interlude in the IFIC. My main work during this period consisted in demonstrating that composite fermionic resonances are elusive to the dedicated experimental analyses that were ongoing at the time. My (single author) article reshaped several ATLAS searches (**more than 80 citations**). I also continued doing outreach, being selected as one of the finalists of the XVIII edition of the international contest

"Science in action". Moreover, I wrote an **outreach book on Quantum Mechanics** later marketed by the publishing house Laetoli.

After a year, I was **awarded the Newton International Fellowship**, which supports research projects at UK institutions (success rate ~7%). I was thereafter based at Durham University as research fellow of the Royal Society for two years. During this time, I also started working intensively on flavour physics. One of my main achievements was proving that recent measurements of CP violation in D decays can hardly be explained within the Standard Model of particle physics (**more than 90 citations**). I also continued doing outreach very extensively, including a two-week tour to the remote Orkney islands to explain particle physics to hundreds of primary school pupils. I became also member of the cosmology working group of the LISA experiment, where I contributed (being corresponding author) to the study of the potential of LISA to gravitational waves ensuing from phase transitions, basing on current state-of-the-art simulations of sound waves (**about 800 citations**). I have appeared in the Stanford list of the "Ranking of the World Scientists: World's Top 2% Scientists" in the last five years.

In 2019 I joined the University of Granada as fellow Juan de la Cierva Incorporación (**first among the selected candidates**), and in 2020 I obtained the Ramón y Cajal fellowship (success rate ~8%). In 2025, I became Associate Professor (Profesor Titular). My current research interests focus more on the quantum structure of effective field theories (with several papers in this last couple of years with **above 50 citations**) both at zero and at finite temperature. Also, I was full member of the ATLAS collaboration for two years, where I made breakthrough contributions to jet triggers, which now take orders of magnitude less time and space disk to build jets that differ only in their varying calibrations.

In total (not counting large collaborations), I have coauthored **about 60 peer-reviewed articles**, as well as other reports. I have authored the large majority of my papers without my thesis advisors (many with only other postdocs/students), **four by myself**. I have written an invited review on Goldstone dark matter. My work has received **more than 3500 citations**, resulting in an **h-index of 35**. I have given talks at **more than 70 international conferences** and seminars all around Europe as well as United States and Asia, **more than 50 as invited speaker**. Moreover, I have co-organized several conferences, some of which (for example the HEFT 2020 and HEFT 2022) of high reputation. I have also made research stays at CERN, Zurich, and Prague, among others. I have also obtained experience in applying and managing national and international funding, being **PI of several projects** and I was selected for the **interview for the ERC Consolidator Grants 2024 and 2025**. On a different front, I have acquired dilated experience in teaching (nearly 600 hours in bachelor and master courses in different countries) and in mentoring students. In particular, I have **co-supervised three PhD theses** (Julian Alcaide now in industry and Maria Ramos now fellow at CERN and Álvaro Díaz Carmona, to join Beijing University as postdoc) and I am currently supervising three. Finally, I have made substantial peer-review work for journals (JHEP, EPJC, PRL, PRD, PLB, IJMPA, MPLA, SciPost and Universe) as well as for funding agencies (South Africa, Spain, Peru, France, Switzerland and Croatia).

Parte C. MÉRITOS MÁS RELEVANTES *(ordenados por tipología)*

C.1. Publicaciones (incluir datos de la calidad de cada publicación)

1. "Detecting gravitational waves from cosmological phase transitions with LISA: an update"; Chiara Caprini, Mikael Chala, Glauber C. Dorsch, Mark Hindmarsh, Stephan J. Huber et al.; JCAP 03 (2020), 024; **758 citations**.

2. "Constraining Dark Sectors with Monojets and Dijets"; Mikael Chala, Felix Kahlhoefer, Matthew McCullough, Germano Nardini, Kai Schmidt-Hoberg; JHEP 07 (2015), 089; **161 citations**.

3. "Unified explanation for dark matter and electroweak baryogenesis with direct detection and gravitational wave signatures"; Mikael Chala, Germano Nardini, Ivan Sobolev; Phys.Rev.D 94 (2016) 5, 055006; **153 citations**.
4. "Running in the ALPs"; Mikael Chala, Guilherme Guedes, Maria Ramos, Jose Santiago; Eur.Phys.J.C 81 (2021) 2, 181; **130 citations**.
5. " ΔA_{CP} within the Standard Model and beyond"; Mikael Chala, Alexander Lenz, Aleksey V. Rusov, Jakub Scholtz; Published in: JHEP 07 (2019), 161; **92 citations**.
6. "Direct bounds on heavy tolike quarks with standard and exotic decays"; Mikael Chala; Phys.Rev.D 96 (2017) 1, 015028; **81 citations**.
7. "Towards the renormalisation of the Standard Model effective field theory to dimension eight: Bosonic interactions I"; Mikael Chala, Guilherme Guedes, Maria Ramos, Jose Santiago; SciPost Phys. 11 (2021), 065; **67 citations**.
8. "Positivity bounds in the standard model effective field theory beyond tree level"; Mikael Chala, Jose Santiago; Phys.Rev.D 105 (2022) 11, L111901; **58 citations**.
9. "Neutrino masses in the Standard Model effective field theory"; Mikael Chala, Arsenii Titov; Phys.Rev.D 104 (2021) 3, 035002; **36 citations**.
10. "Higher-order corrections to phase-transition parameters in dimensional reduction"; Mikael Chala, Juan Carlos Criado, Luis Gil, Javier López Miras; JHEP 10 (2024) 025; **20 citas**.

C.3. Participación/dirección de proyectos

1. "The Quantum Structure of the Standard Model Effective Field Theory"; PI: **Mikael Chala**. Number of members: 1. Funded by the Spanish ministry of science under the "Consolidación Investigadora" programme. Total amount: **186,000 €**.
2. "Effective Field Theories: formal aspects, and phenomenology at the Large Hadron Collider (LHC) and in flavor factories"; PI: Javier Fuentes Martín. Number of members: 8. Funded by Junta de Andalucía under the regional programme of R & D & I. Total amount: **164,864 €**.
3. "Comprehensive study of non-minimal effective field theories"; PI: Michael Spannowsky and Abdelhak Djouadi. Number of members: 12. Funded by The Royal Society under the International Exchange programme. Total amount: **12,000 €**.
4. "Dark matter, Higgs physics and effective field theories"; PI: Abdelhak Djouadi. Number of members: 2. Funded by the Spanish ministry of science under the national programme of R & D & I. Total amount: **89,540 €**.
5. "Searching for axion-like particles combining collider, astrophysical and low-energy data"; PI: **Mikael Chala**. Number of members: 4. Funded by The Royal Society under the Newton international fellowships alumni programme. Total amount: **6,000 £**.
6. "Precise and flavour computations in the standard model and beyond"; PI: Roberto Pittau and Elvira Gámiz. Number of members: 5. Funded by Spanish ministry of science under the national programme of R & D & I. Total amount: **142,780 €**.