

JORGE TEROL CALVO

PhD in Astrophysics

 jorgetc16.github.io

@ jortecal@protonmail.com

RESEARCH INTERESTS

Neutrino physics: Neutrino mass models, phenomenology of neutrinos in cosmology and in astrophysics.

Dark matter: Dark matter models, dark matter cosmology, astrophysical constraints to dark sectors.

RESEARCH EXPERIENCE

INFN Torino, Italy Oct. '24 - Today	Postdoctoral position with the main line of research on dark matter phenomenology.
IAC, Spain Oct. '20 - Sept. '24	PhD thesis in astroparticle physics focused on dark matter and neutrino phenomenology in astrophysics and cosmology.
Fermilab, USA July '23 - Sept. '23	Visitor in the Fermilab theory and particle astrophysics groups.
LAPTh, France November '22	Visitor at the Laboratoire d'Annecy-le-Vieux de Physique Théorique for three weeks.
KIT, Germany April '22 - July '22	Visitor at the Theoretical Astroparticle Physics group of the Institute of Astroparticle Physics.
IFIC, Spain June '19 - Sept. '20	Research assistant in the Astroparticles and High Energy Physics group of IFIC.

EDUCATION

PhD Oct '20 - Sept '24	Instituto de Astrofísica de Canarias - Universidad de La Laguna Thesis: Dark Matter and Neutrinos at the crossroad of Astrophysics, Cosmology and Particle Physics. Advisor: Dr. Jorge Martín Camalich
MSc in Th. Physics Sept '18 - July '19	Universitat de València - Instituto de Física Corpuscular Thesis: Neutrino Non-Standard Interactions from an Effective Field Theory point of view. Advisors: Dr. Mariam Tórtola & Dr. Avelino Vicente
BSc in Physics '14 - '18	Universitat de València Thesis: Neutrino masses: experimental bounds and phenomenology. Advisors: Dr. Mariam Tórtola & Dr. Avelino Vicente
BSc in Physics '16 - '17	Johannes Gutenberg Universität Mainz Erasmus stay of two semesters in Mainz, Germany

PUBLICATION LIST

- [1] **The Highest-Energy Neutrino Event Constrains Dark Matter-Neutrino Interactions**
T. Bertólez-Martínez, G. Herrera, P. Martínez-Miravé and **J. Terol Calvo**, [2506.08993].
- [2] **Searching for axion-like particles with SPHEREx**
M. Regis, M. Taoso and **J. Terol Calvo**, JCAP 05 (2025) 008 [2211.12286].
- [3] **Searches for signatures of ultralight axion dark matter in polarimetry data of the European Pulsar Timing Array**
N.K. Porayko, P. Uzynina, **J. Terol-Calvo**, *et al.* Phys. Rev. D 111 (2025) no.6, 062005 [2412.02232].
- [4] **A seesaw model for large neutrino masses in concordance with cosmology**
M. Escudero, T. Schwetz and **J. Terol-Calvo**, JHEP 02 (2023) 142 [2211.01729].
- [5] **New physics searches at kaon and hyperon factories**
E. Goudzovski, D. Redigolo, K. Tobioka, J. Zupan, *et al.* (JTC), Rept. Prog. Phys. 86 (2023) no.1, 016201 [arXiv:2201.07805].
- [6] **Searching for dark-matter waves with PPTA and QUIJOTE pulsar polarimetry**
A. Castillo, J. Martín-Camalich, **J. Terol-Calvo**, D. Blas, A. Caputo, R. T. G. Santos, L. Sberna, M. Peel and J. A. Rubiño-Martín, JCAP 06 (2022) no.06, 014 [arXiv:2201.03422].

- [7] $(g - 2)_{e,\mu}$ in an extended inverse type-III seesaw model
P. Escribano, **J. Terol-Calvo** and A. Vicente, *Phys. Rev. D* 103 (2021) no.11, 115018 [arXiv:2104.03705].
- [8] **Supernova Constraints on Dark Flavored Sectors**
J. M. Camalich, **J. Terol-Calvo**, L. Tolos and R. Ziegler, *Phys. Rev. D* 103 (2021) no.12, L121301 [arXiv:2112.11632].
- [9] **High-energy constraints from low-energy neutrino nonstandard interactions**
J. Terol-Calvo, M. Tórtola and A. Vicente, *Phys. Rev. D* 101 (2020) no.9, 095010 [arXiv:1912.09131].

These publications have been **cited 318 times** according to INSPIRE data as of October 14th 2025.

COMMUNICATIONS

I have given **7 talks** in and **1 lightning talk** at conferences including TAUP 2021, Invisibles 2021 and Axions in Stockholm. I presented **3 posters** including one at the EuCAPT symposium for which I won the prize to the **best poster**.

SEMINARS

IFIC, València April 2025	Searching for ALP Dark Matter across the spectrum IFIC Topical Seminar
ICCUB, Barcelona March 2025	Searching for ALP Dark Matter across the spectrum ICCUB Seminar
ICCUB, Barcelona Sept. 2023	Large neutrino masses in concordance with cosmology ICCUB Seminar
Fermilab, Chicago Sept. 2023	Large neutrino masses in concordance with cosmology Theory Seminar
MPIK, Heidelberg May 2023	Supernova constraints on dark flavoured sectors Particle and Astroparticle Theory Seminar
KIT TTP, Karlsruhe May 2023	Supernova constraints on dark flavoured sectors BSM Seminar

PRIZES AND FELLOWSHIPS

Poster Prize June 2023	Best Poster Third EuCAPT Annual Symposium Among 50 posters presented.
Travel Grant November 2023	EuCAPT Exchange Travel Grant Travel funding to visit for three weeks Dr. Francesca Calore at LAPTh (France) awarded by the European Consortium for Astroparticle Theory.
PhD Fellowship 2020-2024	Ayuda para la Formación del Personal Investigador Competitive PhD fellowship awarded by the spanish Ministry of Science to cover the salary and travel expenses during the completion of my PhD thesis.
Internship 2018	PRISMA Cluster of Excellence Internship program Grant to perform a 2 month internship at the Johannes Gutenberg Universität Mainz awarded by the PRISMA Cluster of Excellence.

TEACHING

Taught **20h of Scientific Computation: Statistics** to first year BSc Physics in Universidad de La Laguna during the summer semester of 2023. Taught **6h of problems** in the TAE 2022 PhD school.

SERVICE

IAC, Spain 2021-2024	Gender Equality Representative of the PhD students in the gender equality committee of the institute.
IAC, Spain 2021-2024	Seminar Organizer Organization of Seminars for the Astroparticle Theory Group of the IAC.
IAC, Spain 2023	Outreach Guide to tours at the Teide Observatory.