

GUILLEM MARTÍ-DEVESA | CV

Astroparticle Physicist
from Barcelona, Spain (age: 28)

Current Position: Universitätsassistent – Postdoc at Universität Innsbruck

Fields: Astroparticle Physics, Gamma-Ray Astronomy

Coding: Python, C, Fortran, R, Java

Languages: Catalan, Spanish, English, German

Tools: FermiTools, XSPEC, git, Tempo2, L^AT_EX



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Summary

Astroparticle physicist, member of the *Fermi* Large Area Telescope (*Fermi* LAT) and the High Energy Stereoscopic System (H. E. S. S.) Collaborations.

Expertise on Galactic Astroparticle Physics, particularly in stellar systems – binaries and stellar clusters – using multi-wavelength data (optical, X-ray, and γ ray). Main methods employed: Maximum-Likelihood Estimation and Time-Series Analysis.

Education

PhD in Physics - Universität Innsbruck, Austria

2017 – 2020

- **Thesis:** *Observational Studies on the Population of Binaries in the Gamma-Ray Sky*
- Doctoral schools at [DIAS-DCU](#) (Ireland), [LAPP-CNRS](#) (France) and [ECAP-FAU](#) (Germany). Radio analysis workshops by [JIVE](#) (Netherlands) and [UK ARC-UM](#) (United Kingdom)

MSc in Astro-, Particle Physics and Cosmology - Universitat de Barcelona, Spain

2016 – 2017

- **Thesis:** *First Multi-Filter Photometric Monitoring of the Be-BH System MWC 656*
- Courses on Statistics and Programming at [ICCUB](#)

BSc in Physics - Universitat de Barcelona, Spain

2012 – 2016

- **Thesis:** *Light Pollution in Barcelona: Night Sky Background Analysis*
- Observations performed at COU (Lleida, Spain) and Calar Alto (Almería, Spain)

Professional Degree in Music - Conservatori de Música de Barcelona, Spain

2008 – 2014

- Honour Commendations in Chamber Music (2014) and Viola (2014)
- Since then, concerts performed in Spain (Barcelona, Valencia, Pamplona, and others), Austria (Innsbruck), France (Toulouse), Germany (Steingaden), and Italy (Dobbiaco)

Work Experience

Universitätsassistent – Postdoc - Universität Innsbruck, Austria

2020 – present

- LAT's Galactic Science Group co-coordinator since September 2022
- Teaching between 4 and 6 hours weekly every semester
- Journal referee for *The Astrophysical Journal* and *Astronomy & Astrophysics*

Graduate researcher - Universität Innsbruck, Austria

2017 – 2020

- Member of the [Fermi-LAT](#) and [H.E.S.S.](#) collaborations (2018–Now)
- One-month shift at H.E.S.S. site (Namibia), and remote data quality monitoring shifts with H.E.S.S. and *Fermi-LAT*

Researcher assistant - Institut d'Estudis Espacials de Catalunya, Spain

2015 – 2017

- Studies on light pollution in natural reserves
- Participation in the [LoNNe](#) calibration campaign in 2016 at COU observatory

Teaching

PR: Practical training course; PS: Exercise course; SE: Seminar; VO: Lecture; VU: Lecture-exercise course

At Universität Innsbruck

2021 - present

· PR Programming for Physics Students	BSc – Summer 2021 & 22 & 23
· PS Physics IV: Nuclear and Particle Physics	BSc – Summer 2021 & 22
· VU Astroparticle Physics I	MSc – Fall 2021/22
· PR Laboratory for Computational Physics A	MSc – Fall 2021/22 & 21/22
· VU Binary Systems in Astrophysics (new creation)	MSc – Fall 2021/22
· PS Physics I: Mechanics and Thermodynamics	BSc – Fall 2022/23
· VO Introduction to Astroparticle Physics	BSc – Fall 2022/23
· SE Bachelor Thesis Seminar (Astroparticle and Particle Physics coordinator)	BSc – 2023
· VU Astroparticle Physics II	MSc – Summer 2023
· VU Theoretical Astrophysics	MSc – Summer 2023

Supervision

Bachelor Theses

· <i>High-Energy Gamma-Rays from the Omega Nebula</i> – Daniel Resch	Summer 2021
· <i>Gamma-Ray Flares of the Microquasar Cygnus X-3: a Fermi-LAT Perspective</i> – Mike Wettke	Summer 2022
· <i>Understanding the High-Energy Emission from the Omega Nebula</i> – Sandrino Achenreiner	Summer 2022
· <i>The Crab Nebula seen by H.E.S.S. and Fermi-LAT with Open-Source Tools</i> – Melanie Federer†	ongoing
· <i>The PWN MHS 15-52 as seen with H.E.S.S. and Fermi-LAT</i> – Lukas Sabathil†	ongoing
· <i>Neutrinos from Colliding Stellar Winds</i> – Bernhard Lang	ongoing
· <i>Anisotropic Inverse Compton from Cygnus X-1</i> – Philipp Aichner	ongoing

Master Theses

· <i>Star Forming Regions as Hadronic Cosmic-Ray Accelerators</i> – Nadine Bourriche*	2021 – 2022
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† Co-supervised with Dr. Markus Holler

* Co-supervised with Prof. Olaf Reimer

Granted observing time

Proposals

· NICER Cycle 5 (PI: Martí-Devesa, #6127, Priority A, 120 ks): <i>Wind-wind interaction and particle acceleration in the Kleinmann Star trapezium system</i> . Additional NuSTAR time (50ks)	2023
· H.E.S.S. internal call (PI: Olivera-Nieto, #P2021-007, Priority A/B, 100h): <i>Observation proposal of the microquasar SS 433</i>	2021
· Other H.E.S.S. internal proposals (co-author, information not public)	2020, 2021, 2023

Talks

Conferences

· VGGRS Workshop VI, Innsbruck, Austria (invited talk & LOC)	April 2023
· Cosmic Magnetism in Void and Filaments, Bologna, Italy	January 2023
· Gamma 2022, Barcelona, Spain	July 2022
· 9th Fermi Symposium, Johannesburg, South Africa (Virtual)	April 2021
· VGGRS Workshop V, Barcelona, Spain	September 2019

Invited seminars

· ICCUB Seminar, Barcelona, Spain	September 2022
· MPIK's Astrophysics Seminar, Heidelberg, Germany (Virtual)	July 2021

Outreach

Activities

- Cloud chamber experiment and Sun observations with high-school students ICCUB – Jan 2017

Talks

- *Understanding the Universe: Astroparticle Physics in Tirol* Mittelschule 2 Wörgl – Oct 2022

Publications

Short authorlist journal publications

- [1] P. Da Vela*, **G. Martí-Devesa**, F. G. Saturni, P. Veres, A. Stamerra and F. Longo. "Intergalactic magnetic field studies by means of γ -ray emission from GRB 190114C". In: *PRD* 107, 6 (Mar. 2023), p. 063030. doi: 10.1103/PhysRevD.107.063030. arXiv: 2303.03137 [astro-ph.HE].
- [2] **G. Martí-Devesa***, O. Reimer, and A. Reimer. "Limits on the non-thermal emission of the WR-WR system Apep". In: *A&A* 670, L6 (Feb. 2023), p. L6. doi: 10.1051/0004-6361/202245332. arXiv: 2212.10146 [astro-ph.HE].
- [3] C. C. Cheung*, T. J. Johnson*, P. Jean*, M. Kerr, K. L. Page, J. P. Osborne, A. P. Beardmore, K. V. Sokolovsky, F. Teyssier, S. Ciprini, **G. Martí-Devesa**, I. Mereu, S. Razzaque, K. S. Wood, S. N. Shore, S. Korotkiy, A. Levina and A. Blumenzweig. "Fermi LAT Gamma-ray Detection of the Recurrent Nova RS Ophiuchi during its 2021 Outburst". In: *ApJ* 935.1, 44 (Aug. 2022), p. 44. doi: 10.3847/1538-4357/ac7eb7. arXiv: 2207.02921 [astro-ph.HE].
- [4] **G. Martí-Devesa*** and O. Reimer. " η Carinae with Fermi-LAT: two full orbits and the third periastron". In: *A&A* 654, A44 (Oct. 2021), A44. doi: 10.1051/0004-6361/202140451. arXiv: 2109.05950 [astro-ph.HE].
- [5] **G. Martí-Devesa*** and O. Reimer. "X-ray and γ -ray orbital variability from the γ -ray binary HESS J1832-093". In: *A&A* 637, A23 (May 2020), A23. doi: 10.1051/0004-6361/202037442. arXiv: 2001.02701 [astro-ph.HE].
- [6] **G. Martí-Devesa***, O. Reimer, J. Li and D. F. Torres. "Hints of γ -ray orbital variability from γ^2 Velorum". In: *A&A* 635, A141 (Mar. 2020), A141. doi: 10.1051/0004-6361/202037462. arXiv: 2001.02708 [astro-ph.HE].

Reports in The Astronomer's Telegram

- [7] T. J. Johnson*, J. B. Coley, **G. Martí-Devesa**, R. H. D. Corbet, C. C. Cheung, M. Kerr, A. B. Pearlman, J. Hare and Z. Wadiasingh. "Continuing >100 MeV Activity from the PSR B1259-63/LS 2883 System 85 Days Post-periastron Detected with the Fermi-LAT". In: *The Astronomer's Telegram* 14612 (May 2021), p. 1.
- [8] T. J. Johnson, **G. Martí-Devesa**, and C.C. Cheung*. "Detection of enhanced emission above 100 MeV, using Fermi-LAT data, associated with the PSR B1259-63/LS 2883 binary system approximately 60 days after periastron". In: *The Astronomer's Telegram* 14540 (Apr. 2021), p. 1.

Complete list of publications on [ADS](#) or [Orcid](#) 