Fecha del CVA	26/09/2023

Parte A. DATOS PERSONALES

Nombre	Daniel		
Apellidos	Morcuende Parrilla		
Sexo	No Contesta	Fecha de Nacimiento	
DNI/NIE/Pasaporte			
URL Web			
Dirección Email			
Open Researcher and Contributor ID (ORCID)	0000-0001-9400-0922		

A.1. Situación profesional actual

Puesto	Investigador posdoctoral		
Fecha inicio	2023		
Organismo / Institución	Instituto de Astrofísica de Andalucía		
Departamento / Centro			
País	España	Teléfono	
Palabras clave	Software; Inteligencia artificial; Fisica as astrofisica -- estrellas; Metodos de analisis de datos; Instrumentacion y detectores para experimentos en fisica, astrofisica, etc		

A.2. Situación profesional anterior (incluye interrupciones en la carrera investigadora - indicar meses totales, según texto convocatoria-)

Periodo	Puesto / Institución / País
2018 - 2023	Personal Docente Investigador en formación / Universidad Complutense de Madrid
2016 - 2018	Personal Ayudante Investigador / Universidad Complutense de Madrid

A.3. Formación académica

Grado/Master/Tesis	Universidad / País	Año
Programa Oficial de Doctorado en Astrofísica	Universidad Complutense de Madrid	2023
Master en Astrofísica	Universidad Complutense de Madrid	2017
Grado en Física	Universidad Complutense de Madrid	2016

Parte B. RESUMEN DEL CV

In March 2023, I received my Ph.D. in astrophysics at the Complutense University of Madrid, where I worked in the High-Energy Physics Group. During this time, I used the CORSIKA and sim_telarray air shower and telescope simulation tools to investigate the impact of atmospheric fluorescence emission on Cherenkov telescopes. As a member of the LST Collaboration and the CTA Consortium, I contributed to developing the analysis library for the Large-Sized Telescope prototype (LST-1) data. I participated in the task force that studied the telescope's performance. Moreover, I was the lead developer of the telescope's onsite analysis chain and was in charge of low-level data processing. I have also been part of the MAGIC Collaboration, where I worked on characterizing the multiwavelength emission from blazars. Within this collaboration, I was also a member of the Software Board, supervising and maintaining the onsite analysis of the telescope data.

My current work at the Instituto de Astrofísica de Andalucía-CSIC (Granada, Spain) focuses on the development of Gammapy, the open-source analysis library for multi-instrument gamma-ray data selected as the official science tool of the Cherenkov Telescope Array Observatory. Here, I also collaborate in the exploitation of the data from the first blazars observed with LST-1.

Parte C. LISTADO DE APORTACIONES MÁS RELEVANTES

C.1. Publicaciones más importantes en libros y revistas con "peer review" y conferencias

AC: Autor de correspondencia; (nº x / nº y): posición firma solicitante / total autores. Si aplica, indique el número de citaciones

1 **Artículo científico**. Acciari V.A.; Agudo I.; Aniello T.; et al; Lombardi S.2023. A lower bound on intergalactic magnetic fields from time variability of 1ES 0229+200 from MAGIC and Fermi /LAT observations. Astronomy and Astrophysics. 670. ISSN 00046361. SCOPUS (4) https://doi.org/10.1051/0004-6361/202244126

2 **Artículo científico**. Acciari V.A.; Aniello T.; Ansoldi S.; et al; Lombardi S.2023. Long-Term multi-wavelength study of 1ES 0647+250. Astronomy and Astrophysics. 670. ISSN 00046361. https://doi.org/10.1051/0004-6361/202244477

3 **Artículo científico**. Abe H.; Abe S.; 0000-0001-8307-2007; et al; 0000-0002-8002-8585. 2023. MAGIC observations provide compelling evidence of hadronic multi-TeV emission from the putative PeVatron SNR G106.3+2.7. Astronomy and Astrophysics. 671. ISSN 00046361. SCOPUS (4) https://doi.org/10.1051/0004-6361/202244931

4 **Artículo científico**. Abe H.; Abe S.; 0000-0001-8307-2007; et al; 0000-0001-9159-9853. 2023. Multimessenger Characterization of Markarian 501 during Historically Low X-Ray and γ-Ray Activity. Astrophysical Journal, Supplement Series. 266. ISSN 00670049. SCOPUS (2) https://doi.org/10.3847/1538-4365/acc181

5 **Artículo científico**. Abe S.; Aguasca-Cabot A.; Agudo I.; et al; Heckmann L.2023. Multiwavelength study of the galactic PeVatron candidate LHAASO J2108+5157. Astronomy and Astrophysics. 673. ISSN 00046361. SCOPUS (3) https://doi.org/10.1051/0004-6361/202245086

6 **Artículo científico**. Acharyya A.; Adam R.; Aguasca-Cabot A.; et al; Fedorova E.2023. Sensitivity of the Cherenkov Telescope Array to TeV photon emission from the Large Magellanic Cloud. Monthly Notices of the Royal Astronomical Society. 523, pp.5353-5387. ISSN 00358711. https://doi.org/10.1093/mnras/stad1576

7 **Artículo científico**. Acero F.; Acharyya A.; Adam R.; et al; Fegan S.2023. Sensitivity of the Cherenkov Telescope Array to spectral signatures of hadronic PeVatrons with application to Galactic Supernova Remnants. Astroparticle Physics. 150. ISSN 09276505. SCOPUS (1) https://doi.org/10.1016/j.astropartphys.2023.102850

8 **Artículo científico**. Acciari V.A.; Ansoldi S.; Antonelli L.A.; et al; Mallamaci M.2023. Study of the GeV to TeV morphology of the γ Cygni SNR (G 78.2+2.1) with MAGIC and Fermi-LAT: Evidence for cosmic ray escape. Astronomy and Astrophysics. 670. ISSN 00046361. SCOPUS (2) https://doi.org/10.1051/0004-6361/202038748

9 **Artículo científico**. 0000-0001-8307-2007; Aniello T.; 0000-0002-5613-7693; et al; 0000-0002-3882-9477. 2022. Investigating the Blazar TXS 0506+056 through Sharp Multiwavelength Eyes during 2017-2019. Astrophysical Journal. 927. ISSN 0004637X. SCOPUS (7) https://doi.org/10.3847/1538-4357/ac531d

10 **Artículo científico**. Adams C.B.; Batista P.; 0000-0003-2098-170X; et al; 0000-0002-2018-9715. 2022. Multiwavelength Observations of the Blazar VER J0521+211 during an Elevated TeV Gamma-Ray State. Astrophysical Journal. 932. ISSN 0004637X. SCOPUS (4) https://doi.org/10.3847/1538-4357/ac6dd9

11 **Artículo científico**. Acciari V.A.; Ansoldi S.; Antonelli L.A.; et al; López-Moya M.2022. Multiwavelength study of the gravitationally lensed blazar QSO B0218+357 between 2016 and 2020. Monthly Notices of the Royal Astronomical Society. 510, pp.2344-2362. ISSN 00358711. SCOPUS (4) https://doi.org/10.1093/mnras/stab3454

12 **Artículo científico**. Acciari V.A.; Ansoldi S.; Antonelli L.A.; et al; Longo F.2022. Proton acceleration in thermonuclear nova explosions revealed by gamma rays. Nature Astronomy. 6, pp.689-697. SCOPUS (23) https://doi.org/10.1038/s41550-022-01640-z

13 **Artículo científico**. Acciari V.A.; Ansoldi S.; Antonelli L.A.; et al; Martinez M.2021. An intermittent extreme BL Lac: MWL study of 1ES 2344+514 in an enhanced state. Monthly Notices of the Royal Astronomical Society. 496, pp.3912-3928. ISSN 00358711. SCOPUS (6) https://doi.org/10.1093/mnras/staa1702

14 **Artículo científico**. Acciari V.A.; Ansoldi S.; Antonelli L.A.; et al; López-Oramas A.2021. First detection of VHE gamma-ray emission from TXS 1515-273, study of its X-ray variability and spectral energy distribution. Monthly Notices of the Royal Astronomical Society. 507, pp.1528-1545. ISSN 00358711. SCOPUS (2) https://doi.org/10.1093/mnras/stab1994

15 **Artículo científico**. Acciari V.A.; Ansoldi S.; Antonelli L.A.; et al; Majumdar P.2021. Investigation of the correlation patterns and the Compton dominance variability of Mrk 421 in 2017. Astronomy and Astrophysics. 655. ISSN 00046361. SCOPUS (12) https://doi.org/10.1051/0004-6361/202141004

16 **Artículo científico**. Acciari V.A.; Ansoldi S.; Antonelli L.A.; et al; López-Oramas A.2021. VHE gamma-ray detection of FSRQ QSO B1420+326 and modeling of its enhanced broadband state in 2020. Astronomy and Astrophysics. 647. ISSN 00046361. SCOPUS (11) https://doi.org/10.1051/0004-6361/202039687

17 **Artículo científico**. Acciari V.A.; Ansoldi S.; Antonelli L.A.; et al; López-Oramas A.2020. Detection of the Geminga pulsar with MAGIC hints at a power-law tail emission beyond 15 GeV. Astronomy and Astrophysics. 643. ISSN 00046361. SCOPUS (21) https://doi.org/10.1051/0004-6361/202039131

18 **Artículo científico**. Acciari V.A.; Ansoldi S.; Antonelli L.A.; et al; Manganaro M.2020. New Hard-TeV Extreme Blazars Detected with the MAGIC Telescopes. Astrophysical Journal, Supplement Series. 247. ISSN 00670049. SCOPUS (38) https://doi.org/10.3847/1538-4365/ab5b98

19 **Artículo científico**. Acciari V.A.; Ansoldi S.; Antonelli L.A.; et al; Loporchio S.2020. Studying the nature of the unidentified gamma-ray source HESS J1841-055 with the MAGIC telescopes. Monthly Notices of the Royal Astronomical Society. 497, pp.3734-3745. ISSN 00358711. SCOPUS (4) https://doi.org/10.1093/mnras/staa2135

20 **Artículo científico**. Acciari V.A.; Ansoldi S.; Antonelli L.A.; et al; Mallamaci M.2020. Testing two-component models on very high-energy gamma-ray-emitting BL Lac objects. Astronomy and Astrophysics. 640. ISSN 00046361. SCOPUS (8) https://doi.org/10.1051/0004-6361/202037811

21 **Artículo científico**. magic Collaboration; Other Groups; 0000-0001-8307-2007; et al; 0000-0002-5481-5040. 2020. Unraveling the Complex Behavior of Mrk 421 with Simultaneous X-Ray and VHE Observations during an Extreme Flaring Activity in 2013 April. Astrophysical Journal, Supplement Series. 248. ISSN 00670049. SCOPUS (19) https://doi.org/10.3847/1538-4365/ab89b5

22 **Artículo científico**. Acharyya A.; Agudo I.; Angüner E.O.; et al; Dazzi F.2019. Monte Carlo studies for the optimisation of the Cherenkov Telescope Array layout. Astroparticle Physics. 111, pp.35-53. ISSN 09276505. SCOPUS (58) https://doi.org/10.1016/j.astropartphys.2019.04.001

23 **Artículo científico**. 0000-0001-9400-0922; 0000-0001-8208-9480; 0000-0001-7282-2394; 0000-0002-4930-9282. 2019. Relevance of the fluorescence radiation in VHE gamma-ray observations with the Cherenkov technique. Astroparticle Physics. 107, pp.26-34. ISSN 09276505. SCOPUS (2) https://doi.org/10.1016/j.astropartphys.2018.11.003

24 **Revisión bibliográfica**. 0000-0001-6993-1696; 0000-0003-4317-3385; Asada K.; et al; Hecht M.H.2021. Broadband Multi-wavelength Properties of M87 during the 2017 Event Horizon Telescope Campaign. Astrophysical Journal Letters. 911. ISSN 20418205. SCOPUS (48) https://doi.org/10.3847/2041-8213/abef71

25 **Revisión bibliográfica**. Acciari V.A.; Ansoldi S.; Antonelli L.A.; et al; Miceli D.2020. Broadband characterisation of the very intense TeV flares of the blazar 1ES 1959+650 in 2016. Astronomy and Astrophysics. 638. ISSN 00046361. SCOPUS (20) https://doi.org/10.1051/0004-6361/201935450

C.2. Congresos

1 Daniel Morcuende Parrilla. Performance of the Large-Sized Telescope prototype of the Cherenkov Telescope Array. 38th International Cosmic Ray Conference. Commission C4 (Astroparticle Physics) of the International Union of Pure and Applied Physics. 2023. Japón. Congreso.

2 Jose Enrique Ruiz; Daniel Morcuende. LSTOSA: Onsite processing pipeline for the CTA Large Size Telescope prototype. Astronomical Data Analysis Software & Systems XXX. Instituto de Astrofísica de Andalucía. 2020. España.

3 Daniel Morcuende; Jaime Rosado. ShowerModel: A Python package for modeling cosmic-ray induced air showers, their light production and detection. Astronomical Data Analysis Software & Systems XXX. Instituto de Astrofísica de Andalucía. 2020. España.

4 Daniel Morcuende; Mireia Nievas Rosillo; José Luis Contreras. The role of a fast On-Site analysis in the study of very-high-energy AGN activity. V MEETING OF AGN RESEARCH IN SPAIN. Instituto de Física de Cantabria (IFCA). 2019. España.

5 Daniel Morcuende; Jaime Rosado; Jose Luis Contreras. Simulation of fluorescence radiation for Cherenkov observatories. The New Era of Multi-Messenger Astrophysics. Netherlands Institute for Radio Astronomy (ASTRON) and ASTERICS Collaboration. 2019. Holanda. Participativo - Ponencia oral (comunicación oral). Congreso.

C.3. Proyectos o líneas de investigación

1 **Proyecto**. Astronomía de rayos gamma con MAGIC Y CTA-Norte, proyecto 1 - Contribución de UCM-GAE (MICINN (PID2019-104114RB-C32)). Juan Abel Barrio Uña. (Universidad Complutense de Madrid). 01/06/2021-31/05/2023. 2.890.000 €.

2 **Proyecto**. Contribución del GAE-UCM a la puesta en marcha y primera ciencia del observatorio CTA Norte (FPA2017-82729-C6-3-R). Jose Luis Contreras González. (Universidad Complutense de Madrid). 01/01/2018-31/12/2020. 170.000 €.

3 **Proyecto**. Integración y puesta en servicio del primer telescopio grande y otros elementos claves del proyecto ESFRI CTA: subproyecto del GAE-UCM (FPA2015-69210-C6-3-R). Jose Luis Contreras González. (Universidad Complutense de Madrid). 01/01/2016-31/12/2017. 145.000 €.