

Claudio Andrea Manzari, Ph.D.

Curriculum Vitae

March 10th 2025

Curriculum Vitae ai fini della pubblicazione.

Part I - General Information

Full Name: Claudio Andrea Manzari

Spoken Languages: Italian (mother tongue), English (fluent), French (intermediate)

Part II - Appointments

Year	Institution	Position
From September 1 st 2025	Institute for Advanced Study - Princeton	Postdoctoral Fellowship
2024	Fermilab	Scientific Visitor
2024	Laboratoire d'Annecy De Physique Des Particules (LAPP)	Scientific Visitor
2023	CERN	Scientific Visitor
2022 – present	UC Berkeley & Lawrence Berkeley National Laboratory	Postdoctoral Fellowship
2022 – present	Berkeley Center for Theoretical Physics	Member
2021	UC Santa Cruz	Scientific Visitor
2017	FERMILAB	Summer Fellowship

Part III - Education

Degree	Year	Institution
Ph.D. in Physics	2019 – 2022	The University of Zürich (Switzerland)
Master's Degree in Physics (<i>summa cum laude</i>)	2016 – 2018	The University of Bari (Italy)
Bachelor's Degree in Physics (<i>summa cum laude</i>)	2013 – 2016	The University of Bari (Italy)
High School Diploma (100/100)	2008 – 2013	Liceo Classico "Quinto Orazio Flacco" (Bari, Italy)

Part IV - Teaching Experience

Year	Institution	Lecture/Course
2024	UC Berkeley	Beyond the Standard Model, <i>Graduate Degree in Physics</i> - Lecturer
2024	UC Berkeley	Co-supervisor of the Undergraduate Research Project of Ms. Garima Prabakar
2023	UC Berkeley	Supersymmetry, <i>Graduate Degree in Physics</i> - Lecturer
2022	University of Zurich	Co-supervisor of the Bachelor's Thesis of Ms. Giorgia Alessandra Busin
2022	University of Zürich	Elementary Particle Theory, <i>Master's Degree in Physics</i> - Assistant
2021	University of Zürich	Classical Mechanics, <i>Bachelor's Degree in Physics</i> - Assistant
2021	University of Zürich	Algebra II, <i>Bachelor's Degree in Physics</i> - Assistant
2020	University of Zürich	Introduction to Astrophysics, <i>Bachelor's Degree in Physics</i> - Assistant
2020	University of Zürich	Analysis II, <i>Bachelor's Degree in Physics</i> - Assistant

Part V - Society Membership, Fellowship, Awards and Honors

Year	Title	
2025	CERN Fellowship - <i>Postponed to 2026</i>	Geneva (Switzerland)
2025	Institute for Advanced Study Fellowship	Princeton (New Jersey, USA)
2025	Abilitazione Scientifica Nazionale II fascia PHYS-02	Italian Ministry of University & Research
2024	Member of the American Physical Society	
2022	UC Berkeley Fellowship	Berkeley (California, USA)
2022	Lawrence Berkeley National Laboratory Fellowship	Berkeley (California, USA)
2022	Member of the Berkeley Center for Theoretical Physics	Berkeley (California, USA)
2020	Vito Volterra Prize	Italian Physical Society
2020	LHCP Conference Prize	
2019-2022	Member of the LHCb collaboration	
2017	Fermilab Summer Fellowship (INFN-FNAL)	Chicago (Illinois, USA)
2016	Member of the Italian Physical Society	
2013–2018	Yearly Performance Prize	The University of Bari (Italy)

Part VI - Funding Information [grants as PI-principal investigator or I-investigator]

Year	Title	Program	Value
2022	Alumni Grant	The University of Zürich	10000 €
2021	Pauli Center Grant	ETH Zürich	15000 €
2021	Graduate Campus Grant	The University of Zürich	10000 €
2021	Graduate Campus Travel Grant	The University of Zürich	5000 €

Part VII - Research Activities

Keywords	Brief Description
The Strong CP Problem	Understanding the absence of violation of Parity and its combination with Charge Conjugation in the strong interactions.
Flavor Physics	Investigating open questions such as the origin of hierarchies in the fermion masses and mixing angles and the origin of neutrino masses.
Electroweak Hierarchy Problem	Exploring theoretical motivations for the apparent fine-tuning in the scale of the electroweak interactions.
Dark Matter	Study of models, their phenomenology, and detection strategies to uncover the nature of dark matter.
Astrophysical Probes of Physics Beyond the Standard Model	Employing the observation of astrophysical system such as Supernovae and Neutron stars to test predictions of the Standard Model and signatures of theoretically motivated models of new physics.
Collider Physics	Using high-energy particle collisions to test theoretical predictions of the Standard Model and constrain new physics beyond it.

Part VIII - Summary of Scientific Achievements

Data Base: Scopus (Main Author Papers)	
Published Papers [2020-2024]	22
Total Impact factor	137.553
Average Impact factor	6.3
Total Citations	838
Average Citations per Product	38.1
Hirsch (H) index	14
Normalized H index*	2.33

Data Base: Scopus (Collaboration Papers & Proceedings Included)	
Published Papers [2020-2024]	112
Total Citations	1792
Average Citations per Product	16
Hirsch (H) index	21
Normalized H index*	3.5

*H index divided by the academic seniority (6 years).

Part IX - Organization of Workshops, Conferences and Seminars

Year	Event
2025	Organizer of the Workshop "The strong CP problem and its possible solutions" - Pollica Physics Centre
2024	Convener of "LHCb Implication" Workshop - CERN
2023-2025	Organizer of the ATLAS-Theory Seminar Series at UC Berkeley & Lawrence Berkeley National Laboratory
2023-2024	Organizer of the High Energy Theory Seminar Series at UC Berkeley & Lawrence Berkeley National Laboratory
2022	Organizer of the "Workshop on Lepton Flavor (Universality) Violation" - Zürich

Part X - Referee Activity

Since 2021, I have served as a referee for scientific papers in the following international journals:

- Physics Review Letter
- Physics Review D
- The European Physical Journal C
- Journal of High Energy Physics

Part XI - Invited Speaker

2025	Workshop "Enabling the Discovery of QCD Axion Dark Matter at the GUT scale"
2025	Princeton University
2025	University of Padova
2025	Center for Astrophysics Harvard & Smithsonian
2025	University of Michigan
2024	Harvard University
2024	University of Chicago
2024	Fermilab
2024	UC Santa Cruz
2024	DOE LBNL Review
2024	New York University
2024	Perimeter Institute
2023	CERN
2023	Duke University
2022	Workshop "Flavor at a Crossroad" at Mainz Institute for Theoretical Physics
2022	UC Berkeley
2022	Korea Institute for Advanced Studies
2022	Karlsruhe Institute for Theoretical Particle Physics
2021	10th International Conference "Large Hadron Collider Physics"
2021	20th Lomonosov Conference on Elementary Particle Physics
2021	Universitat Autònoma de Barcelona
2021	University of Chicago
2021	Workshop "Anomalies and Precision in the Belle II Era"
2021	55th Rencontres de Moriond (EW session)
2020	University of Bari

Part XII - Other Conferences and Workshops

- Workshop "Crossroads between Theory and Phenomenology" at CERN
- 26th International Conference "From the Planck Scale to the Electroweak Scale"
- Phenomenology Symposium 2023

- 25th International Conference “From the Planck Scale to the Electroweak Scale”
- 24th International Conference “From the Planck Scale to the Electroweak Scale”
- 107th National Congress of Italian Physical Society
- 22nd Particles and Nuclei International Conference
- XXVIII Conference on Supersymmetry and Unification of Fundamental Interactions
- European Physical Society Conference 2021
- 28th International Workshop “Weak Interactions and Neutrinos”
- International Conference “Beyond Standard Model: From Theory to Experiment 2021”
- 55th Rencontres de Moriond (QCD session)
- 34th International Workshop “Le Rencontres de Physique de la Vallée d’Aoste”
- 8th International Conference “Large Hadron Collider Physics”

Part XIII – Outreach Activities & Dissemination

- Interview INAF - 2024 (<https://www.media.inaf.it/2024/11/27/in-una-supernova-esplode-anche-la-materia-oscura/>)
- European Researchers’ Night - 2016, 2017, 2018
- Fermilab Open House Guide - 2017

Part XIV – Publications (Collaboration Papers & Proceedings excluded)

* includes three papers under review

- [1] J. N. Benabou, C. A. Manzari, Y. Park, G. Prabhakar, B. R. Safdi, and I. Savoray, *Time-delayed gamma-ray signatures of heavy axions from core-collapse supernovae*, Submitted to Phys. Rev. Lett. (2024), arXiv:2412.13247 [hep-ph].
- [2] L. Hall, C. A. Manzari, and B. Noether, *Strong CP and Flavor in Multi-Higgs Theories*, Submitted to Phys. Rev. Lett. (2024), arXiv:2407.14585 [hep-ph].
- [3] C. A. Manzari, Y. Park, B. R. Safdi, and I. Savoray, *Supernova Axions Convert to Gamma Rays in Magnetic Fields of Progenitor Stars*, Phys. Rev. Lett. **133** (2024) 211002, arXiv:2405.19393 [hep-ph].
- [4] C. A. Manzari and D. J. Robinson, *On-shell recursion and holomorphic HQET for heavy quark hadronic resonances*, Submitted to JHEP (2024), arXiv:2402.12460 [hep-ph].
- [5] Q. Bonnefoy, L. Hall, C. A. Manzari, A. McCune, and C. Scherb, *Dark matter in a mirror solution to the strong CP problem*, Phys. Rev. D **109** (2024) 055045, arXiv:2311.00702 [hep-ph].
- [6] C. A. Manzari, J. Martin Camalich, J. Spinner, and R. Ziegler, *Supernova limits on muonic dark forces*, Phys. Rev. D **108** (2023) 103020, arXiv:2307.03143 [hep-ph].
- [7] Q. Bonnefoy, L. Hall, C. A. Manzari, and C. Scherb, *Colorful Mirror Solution to the Strong CP Problem*, Phys. Rev. Lett. **131** (2023) 221802, arXiv:2303.06156 [hep-ph].
- [8] A. Crivellin, C. A. Manzari, B. Mellado, and S.-E. Dahbi, *Consistency and interpretation of the LHC dijet excesses*, Phys. Rev. D **107** (2023) 054045, arXiv:2208.12254 [hep-ph].
- [9] A. Crivellin, F. Kirk, and C. A. Manzari, *Comprehensive analysis of charged lepton flavour violation in the symmetry protected type-I seesaw*, JHEP **12** (2022) 031, arXiv:2208.00020 [hep-ph].
- [10] C. A. Manzari and S. Profumo, *Flavor inspired model for dark matter*, Phys. Rev. D **106** (2022) 075025, arXiv:2206.06768 [hep-ph].
- [11] A. Crivellin, C. A. Manzari, W. Altmannshofer, G. Inguglia, P. Feichtinger, and J. Martin Camalich, *Toward excluding a light Z' explanation of $b \rightarrow s\ell + \ell^-$* , Phys. Rev. D **106** (2022) L031703, arXiv:2202.12900 [hep-ph].
- [12] M. Algueró, J. Matias, A. Crivellin, and C. A. Manzari, *Unified explanation of the anomalies in semileptonic B decays and the W mass*, Phys. Rev. D **106** (2022) 033005, arXiv:2201.08170 [hep-ph].
- [13] A. Esposito, C. A. Manzari, A. Pilloni, and A. D. Polosa, *Hunting for tetraquarks in ultraperipheral heavy ion collisions*, Phys. Rev. D **104** (2021) 114029, arXiv:2109.10359 [hep-ph].
- [14] O. Fischer *et al.*, *Unveiling hidden physics at the LHC*, Eur. Phys. J. C **82** (2022) 665, arXiv:2109.06065 [hep-ph].
- [15] A. Crivellin, M. Hoferichter, M. Kirk, C. A. Manzari, and L. Schnell, *First-generation new physics in simplified models: from low-energy parity violation to the LHC*, JHEP **10** (2021) 221, arXiv:2107.13569 [hep-ph].
- [16] A. J. Buras, A. Crivellin, F. Kirk, C. A. Manzari, and M. Montull, *Global analysis of leptophilic Z' bosons*, JHEP **06** (2021) 068, arXiv:2104.07680 [hep-ph].
- [17] A. Crivellin, C. A. Manzari, and M. Montull, *Correlating nonresonant di-electron searches at the LHC to the Cabibbo-angle anomaly and lepton flavor universality violation*, Phys. Rev. D **104** (2021) 115016, arXiv:2103.12003 [hep-ph].

- [18] A. Crivellin, M. Hoferichter, and C. A. Manzari, *Fermi Constant from Muon Decay Versus Electroweak Fits and Cabibbo-Kobayashi-Maskawa Unitarity*, Phys. Rev. Lett. **127** (2021) 071801, arXiv:2102.02825 [hep-ph].
- [19] A. Crivellin, F. Kirk, C. A. Manzari, and L. Panizzi, *Searching for lepton flavor universality violation and collider signals from a singly charged scalar singlet*, Phys. Rev. D **103** (2021) 073002, arXiv:2012.09845 [hep-ph].
- [20] A. Crivellin, C. A. Manzari, M. Alguero, and J. Matias, *Combined Explanation of the $Z \rightarrow b\bar{b}$ Forward-Backward Asymmetry, the Cabibbo Angle Anomaly, and $\tau \rightarrow \mu\nu\nu$ and $b \rightarrow s\ell^+\ell^-$ Data*, Phys. Rev. Lett. **127** (2021) 011801, arXiv:2010.14504 [hep-ph].
- [21] A. Crivellin, F. Kirk, C. A. Manzari, and M. Montull, *Global Electroweak Fit and Vector-Like Leptons in Light of the Cabibbo Angle Anomaly*, JHEP **12** (2020) 166, arXiv:2008.01113 [hep-ph].
- [22] B. Capdevila, A. Crivellin, C. A. Manzari, and M. Montull, *Explaining $b \rightarrow s\ell^+\ell^-$ and the Cabibbo angle anomaly with a vector triplet*, Phys. Rev. D **103** (2021) 015032, arXiv:2005.13542 [hep-ph].
- [23] A. Crivellin, M. Hoferichter, C. A. Manzari, and M. Montull, *Hadronic Vacuum Polarization: $(g - 2)_\mu$ versus Global Electroweak Fits*, Phys. Rev. Lett. **125** (2020) 091801, arXiv:2003.04886 [hep-ph].
- [24] A. M. Coutinho, A. Crivellin, and C. A. Manzari, *Global Fit to Modified Neutrino Couplings and the Cabibbo-Angle Anomaly*, Phys. Rev. Lett. **125** (2020) 071802, arXiv:1912.08823 [hep-ph].
- [25] L. Calibbi, A. Crivellin, F. Kirk, C. A. Manzari, and L. Vernazza, *Z' models with less-minimal flavour violation*, Phys. Rev. D **101** (2020) 095003, arXiv:1910.00014 [hep-ph].

Berkeley, March 10th 2025