

DR. MANUEL MEYER | CURRICULUM VITÆ

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»»» Personal Details

- » **Languages:** German (native), English (fluent), Swedish (proficient), Danish (basic), French (basic), Spanish (basic)
- » **Identifiers:** [ORCID:0000-0002-0738-7581](https://orcid.org/0000-0002-0738-7581), [INSPIRE HEP: Manuel.Meyer.1](https://inspirehep.net/literature/Manuel.Meyer.1), [Scopus Researcher ID: 55463373300](https://scopus.com/researcher/55463373300), [Web of Science: E-2697-2016](https://www.webofscience.com/E-2697-2016), [Google Scholar](https://scholar.google.com/citations?user=Manuel.Meyer)

»»» Research Interests

My interests lie in the field of astroparticle physics and experimental searches for dark matter, in particular in the form of axions and axion-like particles. My research has provided stringent limits on the coupling between photons and axion-like particles using astrophysical observations. I also participate in the characterization and commissioning of the transition edge sensor to be used in the ALPS II experiment and lead the development of machine-learning-based data analysis.

»»» Experience

Since 2023	Associate Professor for Experimental Physics » Center for Cosmology and Particle Physics Phenomenology (CP3) , University of Southern Denmark » Group website	Odense, Denmark
2021-2022	Research group leader » Institute for Experimental Physics, University of Hamburg » Parental leave: July 2021, March-July 2022	Hamburg, Germany
2019 - 2021	Marie Skłodowska-Curie Research Fellow » Erlangen Center for Astroparticle Physics, University Erlangen-Nuremberg. PI: Prof. Stefan Funk	Erlangen, Germany
2019	Feodor Lynen Research Return Fellow » Deutsches Elektron Synchrotron (DESY). PI: Dr. Axel Lindner	Hamburg, Germany
2017 - 2019	Feodor Lynen Research Fellow » Kavli Institute for Particle Astrophysics and Cosmology, Stanford University. PI: Prof. Roger Blandford	Stanford, CA, USA
2013 - 2016	Post doctoral researcher » Oskar Klein Centre for Cosmoparticle Physics, Stockholm University. PI: Prof. Jan Conrad	Stockholm, Sweden

»»» Education

2010 - 2013	Ph.D., Physics, University of Hamburg » Ph.D. thesis: The opacity of the Universe for high and very high energy γ -rays. Grade: “ <i>Magna Cum Laude</i> ” – with Honors » Advisor: Prof. Dieter Horns	Hamburg, Germany
2004 - 2010	Diploma in Physics, University of Hamburg » Diploma thesis: Spectral Modeling of the Crab Nebula and Search for oscillatory features in X-ray data induced by hidden Photons. Grade: “ <i>Excellent, with Honors</i> ” » Advisor: Prof. Dieter Horns	Hamburg, Germany

»»» Selected Grants

2021	DFG Research Unit “Relativistic Jets in Active Galaxies”	Bonn, Germany
	<ul style="list-style-type: none"> » Associated member of a research group funded by the German Research Foundation (DFG). » Amount of funding: 3,600,000€ 	
2020	ERC Starting Grant	Brussels, Belgium
	<ul style="list-style-type: none"> » Research grant for early career scientists awarded by European Research Council (ERC). » Amount of funding: 1,441,000€ 	
2019	Marie Skłodowska-Curie Research Fellowship	Brussels, Belgium
	<ul style="list-style-type: none"> » Marie Skłodowska-Curie Actions Research Fellowship awarded by the ERC. » Amount of funding: 175,000€ 	
2016	Feodor Lynen Research Fellowship	Bonn, Germany
	<ul style="list-style-type: none"> » Sponsorship for own research position from the German Humboldt Foundation. » Amount of funding: 126,000€ 	

»»» Awards

2017	Marie Skłodowska-Curie Actions Seal of Excellence	Brussels, Belgium
	<ul style="list-style-type: none"> » Award for proposal submitted under the Horizon 2020 Marie Skłodowska-Curie actions 	
2010	Otto Stern Prize	Hamburg, Germany
	<ul style="list-style-type: none"> » Prize for best diploma thesis in physics of the 2010 summer term at the University of Hamburg 	

»»» Collaboration Memberships

since 2021	Any Light Particle Search II (ALPS II) Collaboration	
	<ul style="list-style-type: none"> » Leading the machine-learning-based data analysis development for the TES detector; member of the executive board 	
since 2013	Fermi Gamma Ray Space Telescope Collaboration	
	<ul style="list-style-type: none"> » Former coordinator of the dark matter and new physics working group 	
since 2012	Cherenkov Telescope Array Observatory (CTAO) Consortium	
	<ul style="list-style-type: none"> » Member of the Speakers and Publications Office, former convener of the Dark Matter and Exotic Physics working group 	
since 2012	High Energy Stereoscopic System (H.E.S.S.) Collaboration	
	<ul style="list-style-type: none"> » Member of steering committee, former member of the executive and multi-wavelength boards, former deputy convener of the astroparticle working group 	





»»» Institutional and Organizational Boards

since 2023	SDU Quantum Hub	Odense, Denmark
	<ul style="list-style-type: none"> » Member of the steering committee 	
since 2023	European COST Action CA21106 “Cosmic WISPers”	
	<ul style="list-style-type: none"> » Danish country representative in management committee 	
since 2023	Quantum Universe Excellence Cluster	Hamburg, Germany
	<ul style="list-style-type: none"> » Representative of the young science group leaders in the steering committee 	

»»» Selected Publications

43 publications in peer-reviewed journals with major contribution (18 as corresponding author). Co-author of more than 65 publications of the H.E.S.S. collaboration, 25 publications of the *Fermi*-LAT collaboration, 28 conference

proceedings, and 5 white papers. According to [NASA ADS](#), the publications have in total more than 12,000 citations with an h index of 52. A publication list including all collaboration papers can be found on orcid.org/0000-0002-0738-7581.

1. S. Porras-Bedmar, M. **Meyer**, and D. Horns, *Novel bounds on decaying axionlike particle dark matter from the cosmic background*, *Phys. Rev. D*, Vol. 110, No. 10, 103501, p. 103501, 2024, arXiv: 2407.10618 [[astro-ph.CO](#)] 
2. M. **Meyer** et al., *A First Application of Machine and Deep Learning for Background Rejection in the ALPS II TES Detector*, *Annalen der Physik*, Vol. 536, No. 1, 2200545 2024, arXiv: 2304.08406 [[hep-ex](#)] 
3. J. Rubiera Gimeno et al. (including M. **Meyer**), *The TES detector of the ALPS II experiment*, *Nuclear Instruments and Methods in Physics Research A*, Vol. 1046, 167588, p. 167588, 2023
4. J. Biteau and M. **Meyer**, *Gamma-Ray Cosmology and Tests of Fundamental Physics*, *Galaxies*, Vol. 10, No. 2, p. 39, 2022, arXiv: 2202.00523 [[astro-ph.CO](#)] 
5. M. **Meyer** and T. Petrushevska, *Search for Axionlike-Particle-Induced Prompt γ -Ray Emission from Extragalactic Core-Collapse Supernovae with the Fermi Large Area Telescope*, *Phys. Rev. Lett.* Vol. 124, No. 23, 231101, p. 231101, 2020, arXiv: 2006.06722 [[astro-ph.HE](#)] 

»»» Conference Contributions

Since 2013, I have given 22 invited talks at conferences, given lectures in 3 international summer schools, and presented my research at 10 invited university colloquia.

»» Selected Invited Presentations

2024	2nd General Meeting of COST Action COSMIC WISPer (plenary talk)	Turkey
2024	TeV Particle Astrophysics Conference (plenary talk)	USA
2024	15th International Workshop on the Identification of Dark Matter (plenary talk)	Italy
2024	Generation, evolution, and observations of cosmological magnetic fields Workshop	Switzerland
2023	Danish Physical Society meeting (plenary talk)	Denmark

»»» Supervision & Mentoring

Spring 2025	Current group: 1 PI, 3 post docs, 1 PhD student, 2 master students, 1 bachelor student
Since 2023	Mentor for the SDU Physics Mentoring program (currently 4 mentees)
Since 2021	Mentor of the Fermi-LAT mentoring program (2 mentees in past cycles)
Since 2018	Main supervisor of 1 post doc: Gulden Othman (2021-2024) and 1 PhD student: Rahul Cecil (2021-2025); co-supervision of 3 PhD students: J. Davies (2020-2022), M. Crnogorčević (2018-2023), A. Yusafzai (2020-2022).
Since 2014	Main supervisor of 5 master students and 8 bachelor students; co-supervisor of 4 master students and 1 bachelor student

»»» Teaching and Formal Training in Teaching

»» Courses and Classes taught

Since 2024	Astroparticle Physics	Odense, Denmark
	» 10 ECTS lecture and exercise classes for master students, spring term 2024.	
Since 2024	Electrodynamics	Odense, Denmark
	» 5 ECTS lecture and exercise classes for undergraduate students, spring term 2024.	
Since 2023	Introduction to Quantum Mechanics	Odense, Denmark
	» 5 ECTS lecture and exercise classes for undergraduate students, winter term 2023/2024.	

Since 2023	Research Activities in Experimental Physics	Odense, Denmark
	» 5 ECTS course project work on experimental physics and data analysis for small groups of graduate students, winter term 2023/2024.	
2021 - 2022	Particle and Astroparticle Physics	Hamburg, Germany
	» Seminars prepared by students in winter term 2021/2022.	
2020 - 2022	Gamma-ray Telescope in the Classroom	Erlangen, Germany
	» Lectures, exercise classes, and observation nights for bachelors and masters students in winter term 2020/2021.	
2019 - 2020	Data Analysis II and Introduction to Machine Learning	Erlangen, Germany
	» Lectures and exercise classes given for masters students in winter term 2019/2020.	
2018	Lectures for pre-collegiate students	Stanford, CA, USA
	» Lectures given for high school students during particle physics and cosmology summer courses.	
2011-2012	Lab assistant for undergraduate physics students	Hamburg, Germany
	» Supervision of small groups of students for week-long labs. Included teaching, supervision, feedback and grading.	

»» Training

2018	Stanford Scientific Teaching Summer Institute	Stanford, CA, USA
	» Three day workshop on science-based teaching, inclusion, and equity.	
2017	Introduction to Undergraduate STEM Teaching	Stanford, CA, USA
	» Online course offered by the Center for the Integration of Research Teaching and Learning, stemteachingcourse.org . Passed with distinction.	

»»» Outreach

7 outreach talks for general public and high schools students, **8 articles for press releases, blogs, and newspapers**. Examples can be found [here](#), [here](#), [here](#), [here](#), [here](#), [here](#), [here](#), [here](#), [here](#), and [here](#). Also worked as a advisor for high school students at the DESY school labs (2008-2009).

»»» Computer skills

» Operating systems:	Mac OS, Ubuntu, Windows
» Programming languages:	python, Root, C++, C
» Scientific Computing:	numpy, scipy, astropy, scikit-learn, iminuit, emcee, tensorflow & keras, matplotlib, hdf5, pandas, git
» Developed Software:	gammaALPs , ebltable
» Data analysis	<i>Fermi</i> -LAT (<i>FERMIPY</i> and <i>Fermi Tools</i>); H.E.S.S. and CTA (<i>HAP</i> and <i>GAMMAPY</i>); <i>Swift</i> XRT, NuSTAR, and XMM-Newton (pipelines and XSPEC); ALMA (<i>CASA</i>), ALPS II (<i>TES</i>)
» Document preparation	L ^A T _E X, Keynote, OpenOffice, Microsoft Office

»»» Reviewing

» Member of scientific organizing committees	Phystat gamma conference 2022, International Cosmic Ray Conference (ICRC) 2021; “Recontres du Vietnam: Very High Energy Phenomena in the Universe” 2018 conference; “The puzzle of dark matter 2018” conference
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» [Journal reviewer](#)

Nature Astronomy, Physical Review Letters, Physical Review D, Astrophysical Journal (ApJ), the Journal of Cosmology and Astroparticle Physics (JCAP), Physics Letters B, Monthly Notes of the Royal Astronomical Society (MNRAS), European Physical Journal C