

DR. MANUEL MEYER | CURRICULUM VITÆ

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- » **Languages:** German (native), English (fluent), Swedish (proficient), French (basic), Spanish (basic)
- » **Identifiers:** ORCID:0000-0002-0738-7581, INSPIRE HEP: Manuel.Meyer.1, Scopus Researcher ID: 55463373300, Google Scholar

»»» 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 currently lead the development of machine-learning-based data analysis of the ALPS II experiment.

»»» Experience

since 2021	Research group leader	Hamburg, Germany
	» Institute for Experimental Physics, University of Hamburg	
2019 - 2021	Marie Skłodowska-Curie Research Fellow	Erlangen, Germany
	» Erlangen Center for Astroparticle Physics, University Erlangen-Nuremberg. PI: Prof. Stefan Funk	
2019	Feodor Lynen Research Return Fellow	Hamburg, Germany
	» Deutsches Elektron Synchrotron (DESY). PI: Dr. Axel Lindner	
2017 - 2019	Feodor Lynen Research Fellow	Stanford, CA, USA
	» Kavli Institute for Particle Astrophysics and Cosmology, Stanford University. PI: Prof. Roger Blandford	
2013 - 2016	Post doctoral researcher	Stockholm, Sweden
	» Oskar Klein Centre for Cosmoparticle Physics, Stockholm University. PI: Prof. Jan Conrad	

»»» Education

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

»»» Selected Grants

2021	DFG Research Unit "Relativistic Jets in Active Galaxies"	Bonn, Germany
	» 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

- » 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

- » Marie Skłodowska-Curie Actions Research Fellowship awarded by the ERC.
- » Amount of funding: 175,000€

2016

Feodor Lynen Research Fellowship

Bonn, Germany

- » 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

- » Award for proposal submitted under the Horizon 2020 Marie Skłodowska-Curie actions

2010

Otto Stern Prize

Hamburg, Germany

- » 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 (ALPS) Collaboration

- » Leading the machine-learning-based data analysis development for the TES detector; member of the executive board

since 2021

International Axion Observatory (IAXO) Collaboration

- » Member of the collaboration board

since 2013

Fermi Gamma Ray Space Telescope Collaboration

- » Former coordinator of the dark matter and new physics working group

since 2012

Cherenkov Telescope Array (CTA) Consortium

- » Convener of the Dark Matter and Exotic Physics working group

since 2012

High Energy Stereoscopic System (H.E.S.S.) Collaboration

- » Member of the multi-wavelength board, former deputy convener of the astroparticle working group

»»» Selected Corresponding Author Publications

34 publications in peer-reviewed journals with major contribution (14 as corresponding author). Co-author of more than 50 publications of the H.E.S.S. collaboration, 14 publications of the *Fermi*-LAT collaboration, 26 conference proceedings, and 5 white papers. According to [NASA ADS](#), the publications have in total more than 8400 citations with an h index of 43. A publication list including all collaboration papers can be found on [ORCID](#).

1. 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](#)]
2. H. Abdalla et al. (CTA Consortium including **M. Meyer**), *Sensitivity of the Cherenkov Telescope Array for probing cosmology and fundamental physics with gamma-ray propagation*, [JCAP](#), Vol. 2021, No. 2, 048, p. 048, 2021, arXiv: [2010.01349](#) [[astro-ph.HE](#)]
3. M. **Meyer** and T. Petrushevskaya, *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](#)]
4. M. **Meyer**, J. D. Scargle, and R. D. Blandford, *Characterizing the gamma-ray variability of the brightest flat spectrum radio quasars observed with the Fermi LAT*, [ApJ](#), Vol. 877, No. 1, 39, p. 39, 2019, arXiv: [1902.02291](#) [[astro-ph.HE](#)].

5. M. **Meyer**, M. Giannotti, A. Mirizzi, M. Sánchez-Conde, and J. Conrad, *The Fermi Large Area Telescope as a Galactic Supernovae Axionscope*, *Phys. Rev. Lett.* Vol. 118, No. 1, p. 011103, 2017, arXiv: 1609.02350 [[astro-ph.HE](#)].

»»» Conference Contributions

Contributed to more than 25 conferences, workshops, and seminars (17 invited).

»» Selected Invited Presentations

2021	Virtual Spring meeting of the German Physical Society	Germany
2020	Virtual Kashiwa Dark Matter Symposium 2020	Japan
2019	15th Patras Workshop on Axions, WIMPs, and WISPs	Germany
2017	7th International <i>Fermi</i> Symposium	Germany
2014	224th Meeting of the American Astrophysical Society	USA

»» Selected Contributed Presentations

2022	7th Heidelberg International Symposium on High-Energy Gamma-Ray Astronomy	Spain
2019	1st CTA Symposium	Italy
2018	8th International <i>Fermi</i> Symposium	USA
2018	TeV Particle Astrophysics 2018	Germany
2017	TeV Particle Astrophysics 2017	USA

»»» Supervision & Mentoring

since 2022	Supervisor of Sara Porras' PhD thesis	Hamburg, Germany
since 2021	Mentor in the <i>Fermi</i> -LAT Mentoring Program (see here for details)	
since 2021	Supervisor of Rahul Cecil's PhD thesis	Hamburg, Germany
since 2021	Co-supervisor of Julian Kuhlmann's masters thesis	Hamburg, Germany
since 2020	Supervisor of Phillip Beck's masters thesis	Erlangen, Germany
since 2020	Co-supervisor of James Davies' PhD thesis	Oxford, UK
since 2020	Co-supervisor of Anke Yusafzai's PhD thesis	Erlangen, Germany
2019	Co-supervisor of Milena Crnogorčević masters thesis	University of Maryland, USA
2017	Supervisor of Nickolas Kokron's research project during his PhD rotation	Stanford, CA, USA
2015	Supervisor of Axel Erbing's bachelors thesis	Stockholm, Sweden

»»» Teaching and Formal Training in Teaching

»» Courses and Classes taught

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

2022	Interview on how to obtain research funding	Hamburg, Germany
2022	Article about own research funded by European Union	Hamburg, Germany
2021	Newspaper article about own research (in German)	Hamburg, Germany
2020	Online presentation for members of the Nuremberg Observatory Association	Nuremberg, Germany
2020	Contribution to University press release about own research published on official University website (in German and English)	Erlangen, Germany
2019	Presentation at the "Silicon Valley Nerd Nite" public outreach series	San Jose, CA, USA
2018	Contribution to SLAC News article about own research	Menlo Park, CA, USA
2018	Presentation at the "Astronomy on tap" public outreach series	San Francisco, CA, USA
2016	Contribution to NASA News article about own research	Greenbelt, Md., USA
2016	Contribution to news article and Blog post about own research	Stockholm, Sweden
2015	Public lecture (in Swedish) at the Ericsson's astronomy club	Stockholm, Sweden
2009-2010	Advisor for high school students at the DESY school labs	Hamburg, Germany

»»» 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 , ebtable
» Data analysis	<i>Fermi</i> -LAT (FERMIPY and <i>Fermi Tools</i>); H.E.S.S. and CTA (HAP and GAMMAPY); <i>Swift</i> XRT, NuSTAR, and XMM-Newton (pipelines and XSPEC); ALMA (CASA), ALPS II (TES)
» Document preparation	L ^A T _E X, Keynote, OpenOffice, Microsoft Office

»»» Reviewing

» Member of scientific organizing committees	Phystat gamma conference (planned for 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](#)

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