

Marc Klinger

Date of Birth:	June 24, 1995	Contact:	DESY Zeuthen Platanenallee 6 15738 Zeuthen, Germany marc.klinger@desy.de https://maklinger.github.io/
Nationality:	German		
Gender:	Male		
ORCID:	0000-0002-4697-1465		

Education and Training

From 01/2020 **PhD in Theoretical Astroparticle Physics**
DESY Zeuthen
Expected end Within the [Helmholtz Weizmann Research School on Multimessenger Astronomy](#)
in spring 2024 Supervisors: Walter Winter, Andrew Taylor, Eli Waxman
Focus: *Time-Dependent Radiation Modeling of Gamma-Ray Burst Afterglows*

- Reduced analytical afterglow modelling
- Time-dependent afterglow modelling of gamma-ray bursts
- Development, maintenance and publication of the [AM³ code](#)
- Counts-level fits from keV-TeV energies

12/2019 **Master of Science in Physics** with distinction
Focus: Astroparticle Physics and Cosmology
RWTH Aachen University
Supervisors: Thomas Bretz, Philipp Mertsch
Thesis: *Developing a Magnetic Reconnection Model to Interpret Blazar Variability as Measured with the FACT Telescope*

10/2016 **Bachelor of Science in Physics** with distinction
RWTH Aachen University
Supervisor: Christopher Wiebusch
Thesis: *Development of a measurement setup to compare acoustic emitters for the EnEx-RANGE project*

Work and Research Experience

05/2017 - 02/2019 **Assistant Scientist at EnEx RANGE Project at RWTH Aachen**
Focus: Experimental lab work and data analysis
Glacier expedition for project validation (08/2017)

02/2017 - 03/2017 **Site visit of Pierre-Auger-Observatory, Argentina**
Participation in maintenance, shifts, collaboration meeting and public outreach work at the local visitor's facility

09/2016 - 12/2016 **Scientific stay at the HAWC Observatory, Mexico**
Studies on Radio Galaxies at the National Autonomous University of Mexico (UNAM)
Participation in the *HAWC Collaboration Meeting* and the *Workshop on a wide field-of-view Southern Hemisphere TeV gamma ray observatory*

Selected Conference Talks

24/10/2023	Plenary: High Energy Phenomena in Relativistic Outflows (HEPRO) Lepto-Hadronic Very-High-Energy GRB Afterglows
10/01/2023	Invited: Transient Tuesday, Niels Bohr Institute, Copenhagen (online) VHE GRB Afterglows: A story about Bactrians, Dromedaries and lots of Butterflies
16/05/2022 18/05/2022	Talks at the Harnack-Haus GRB Workshop Berlin <ul style="list-style-type: none">• One Zone Basics and Effective Descriptions• Multi-wavelength Fitting at the Counts Level
27/10/2021	TeVPA 2021 (online due to Covid) Understanding the Spectrum of Gamma-Ray Burst 190114C
26/03/2019	Spring Meeting of German Physical Society FACT - Spectral variability of TeV-blazars

Awards

12/2020	Financial Performance Bonus for Active and Excellent Engagement in Research Discussions Deutsches Elektronen-Synchrotron (DESY)
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Teaching Experience

07/2023 - 09/2023	DESY Summer student program Supervision of 3 summer student projects on GRB afterglow modeling
07/2022 - 09/2022	
10/2020 - 02/2021	Mathematical Tools for a Physicist at Humboldt University Preparation and discussion of weekly exercise sheets

Outreach

02/2022	Workshop on Outreach Skills 3-day workshop of the German network of (Astro)particle physics outreach
2023, 2022, 2021	International Cosmic Day Talk and supervision of a cosmic-ray experiment in school
2018 - 2020	AIS³ - Astroparticle Immersive Synthesizer³ Construction and Maintenance of AIS³ with Tim Otto Roth in Berlin (08-09/2018), Munich (02/2019) and Aachen (fall 2019) including outreach talks for school classes

Special Qualifications

Computer Skills	Python, C++ LaTeX, Microsoft Office (Excel, Word, PowerPoint), Markdown, GIT	
Languages	German (<i>mother tongue</i>) English (<i>fluent</i>)	Spanish (<i>advanced</i>) Dutch (<i>basic</i>)

List of Publications

2023	Flat Gamma-Ray Burst Afterglow Spectra up to Very-High Energies M. Klinger, C Yuan, A. M. Taylor and W. Winter (in prep.)
2023	AM³: An open-source tool for time-dependent lepto-hadronic modelling of astrophysical sources - M. Klinger, et al. (software, in prep.)
2023	The promise of Gamma-Ray Bursts at TeV energies B. Reville et al. (review, in prep.) My contribution: Summary section on GRB afterglow modelling and GRB 190114C
2023	The Multiwavelength Picture of GRB 221009A's Afterglow M. Klinger, A. M. Taylor, T. Parsotan, et al. (submitted, arXiv:2308.13854)
2023	Probing the multiwavelength emission scenario of GRB 190114C M. Klinger, D. Tak, A. M. Taylor and S. J. Zhu (MNRAS 520 1)
2020	FACT - Probing the Periodicity of Mrk 421 and Mrk 501 M. Klinger, M. Beck and F. Theißen on behalf of the FACT collaboration (ICRC proceeding)
2017	Observation of radio galaxies with HAWC D. Avila, R. Alfaro, A. Galván, M.M. González, N. Fraija and M. Klinger on behalf of the HAWC Collaboration (ICRC proceeding)

Appendix

Additional Talks

30/06/2023	Gamma Group Seminar, DESY Zeuthen GRB 221009A: Afterglow spectrum
21/02/2023	DESY Astroparticle division retreat, Potsdam, Germany Intro-slides for critical review discussion on transients (with R. Konno)
26/01/2023	Science Club of Multimessenger School (online, incl. Weizmann Institute, Israel) Weizsäcker-Williams Approach
18/11/2022	Invited: Astroparticle Seminar at DESY, Zeuthen VHE GRB Afterglows: A story about Bactrians, Dromedaries and lots of Butterflies
23/09/2021	DESY Theory Workshop: Bright ideas for a dark universe (online due to Covid) Understanding the Spectrum of Gamma-Ray Burst 190114C
22/04/2021	Science Club of Multimessenger School (online, incl. Weizmann Institute, Israel) Relativistic Shocks

Additional Intercultural and International Experience

From 01/2020	International Helmholtz-Weizmann Research School for Multimessenger Astronomy
08/2019	Workshop on intercultural communication (2 days) Combining theoretical concepts with practical application to train the ability to detect and resolve intercultural communicational problems
11/2018	German Italian Physics Exchange (GIPE) to Trieste, Italy (4 days)
10/2018 - 03/2019	Mentoring of international master students in Aachen
04/2016 - 09/2016	Support of a Spanish exchange student in Aachen (BeBuddy)
11/2014	Intercultural training (2 days)
06/2012 - 08/2012	School exchange to Instituto de Ballester, Buenos Aires, Argentina