## **Marc Klinger**

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| |  |  | | --- | --- | | **Gender:** | Male | | **Nationality:** | German | | Datei:ORCID logo.svg – Wikipedia : | [0000-0002-4697-1465](https://orcid.org/0000-0002-4697-1465) | |  |  | | |  |  | | --- | --- | | **Contact:** | DESY Zeuthen  Platanenallee 6  15738 Zeuthen, Germany | |  | [marc.klinger@desy.de](mailto:marc.klinger@desy.de) | |  | <https://maklinger.github.io/> | |

Education and Training

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| |  |  | | --- | --- | | From 01/2020  Expected end  in spring 2024 | **PhD in Theoretical Astroparticle Physics**  DESY Zeuthen  Within the [Helmholtz Weizmann Research School on Multimessenger Astronomy](https://www.multimessenger-school.de/)  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](https://gitlab.desy.de/am3/am3) * 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

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| |  |  | | --- | --- | | 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

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| |  |  | | --- | --- | | 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**   * 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

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

Teaching Experience

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

Outreach

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| |  |  | | --- | --- | | 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](https://www.imachination.net/ais3/index_d.php) with Tim Otto Roth in Berlin (08-09/2018), Munich (02/2019) and Aachen (fall 2019) including outreach talks for school classes | |

Special Qualifications

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| |  |  | | --- | --- | | **Computer Skills** | Python, C++  LaTeX, Microsoft Office (Excel, Word, PowerPoint), Markdown, GIT | |
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List of Publications

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| |  |  | | --- | --- | | 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. (MNRAS Letters accepted, [arXiv:2308.13854](https://arxiv.org/abs/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](https://doi.org/10.1093/mnras/stad142)) | |
| |  |  | | --- | --- | | 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

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| |  |  | | --- | --- | | 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

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| |  |  | | --- | --- | | 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** | |