
Curriculum Vitae

PD Dr. Frank M. Rieger

Personal Data

Name	Frank M. Rieger
email	frank.rieger@ipp.mpg.de
Web page	https://fri.home.ipp.mpg.de (institute) http://www.frank-rieger.com (private)
Address (Office)	Max-Planck-Institut für Plasmaphysik (IPP), Boltzmannstraße 2 85748 Garching, Germany and ITP Univ. Heidelberg, Philosophenweg 12, 69120 Heidelberg, Germany
Born	1971, Pforzheim, Germany
Citizenship	German
Family	Married, two children

Positions

2023 -	Staff Scientist, IPP Garching, Germany
2021 - 2023	Senior Researcher (DFG), ITP Univ. Heidelberg, Germany
2015 - 2020	Heisenberg Research Fellow (DFG), Univ. Heidelberg, Germany
2007 - 2014	LEA Senior Researcher (MPG/CNRS), MPIK Heidelberg, Germany
2005 - 2007	Cosmogrid Fellow (HEA), UCD Dublin, Ireland
2003 - 2005	Marie-Curie Postdoctoral Fellow (EU), UCD Dublin, Ireland
2001 - 2002	Postdoctoral Researcher (DFG), Univ. Würzburg, Germany

Qualification

2014	Habilitation, Lecturer (Privat-Dozent), Univ. Heidelberg
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Education

1997 - 2001	Ph.D. in Physics, Univ. Göttingen, Germany
1991 - 1997	Diploma in Physics, Univ. Heidelberg, Germany

Expertise

- High Energy Astrophysics, Cosmic Particle Acceleration, Very High Energy Gamma Rays, Ultra High Energy Cosmic Rays, Astrophysical Plasmas, AGN, Supermassive Black Holes, Relativistic Jets

Research Responsibilities

- Member International Advisory Committee 'Texas Symposium on Relativistic Astrophysics' (2010-)
- Scientific Coordinator Plasma Astrophysics at IPP Garching (2023-)
- Member of the H.E.S.S. and CTA Collaboration
- Associate CDY Institute "The Extreme Non-Thermal Universe" (2021-)
- Scientific Organiser of Conferences in and outside Germany
- International Proceedings Editor, American Institute of Physics (2008-)
- Coordinator Astrophysics, activities & procurement, MPIK Heidelberg (2007-2015)
- Ph.D. supervisor and examiner, Univ. Heidelberg and Univ. of Paris
- External consultant 'Cosmic rays powered by astrophysical compact objects', SR-NSF Georgia

Transferable Skills

- certified Leadership Expert
- certified Project Management Associate (IPMA Level D)
- Effective Communication
- Analytical Reasoning
- Problem Solving

Recognitions & Fellowships

- DFG Research Grant, 2021
- Heisenberg Fellowship, 2014
- Bruno Rossi Prize with the H.E.S.S. Collaboration, 2010
- LEA Fellowship, 2007
- Cosmogrid Fellowship, 2005
- Marie Curie Fellowship, 2003

Publication summary (refereed only - ADS)

- Total number of papers: 243
- Total number of citations: 18850
- Average citation per paper: 76,3
- h-index: 63

Books & editorial work

- High Energy Gamma-Ray Astronomy, with F. Aharonian and W. Hofmann, AIP 1792 (2017)
- High Energy Gamma-Ray Astronomy, with F. Aharonian and W. Hofmann, AIP 1505 (2012)
- Texas Symposium on Relativistic Astrophysics, with F. Aharonian and W. Hofmann, AIP 1381 (2011)
- High Energy Gamma-Ray Astronomy, with F. Aharonian and W. Hofmann, AIP 1085 (2009)

Recent Invited Talks, Lectures and Reviews (since 2018)

- Supermassive Black Holes as Cosmic Powerhouses - A high energy perspective, API Colloquium, Amsterdam, March 2018
- Radio Galaxies: Large-scale Jets and Lobes, Dublin Summer School on High Energy Astrophysics, Dublin, June 2018
- Energetic Particle Acceleration in Shearing Flows, 18th Annual Astrophysics Conf., Pasadena, Feb. 2019
- Cosmic Particle Accelerators: Sources and Mechanisms, ISAPP Summer School, Heidelberg, May 2019
- Magnetospheric Gamma-Ray Emission in AGN, Workshop on Pulsar and Black Hole Magnetospheres, GSFC, Maryland Washington/US, June 2019
- UHE Cosmic Rays and AGN jets, HEPRO, Barcelona, July 2019
- Powering AGN activity - the supermassive black hole in M87, ESO Seminar, Garching, Nov. 2019
- AGN as potential ultra-high energy cosmic-ray sources, Origins Cluster, IPP Garching, March 2020
- VHE gamma-rays from the large-scale jet in Centaurus A, DESY Seminar, Zeuthen, May 2020
- Cosmic Particle Acceleration (5 lectures), Astronomy Winter School Taiwan, January 2021
- High Energy Physics of AGN, Online AGN Meeting, Univ. Kashmir, July 2021
- Theory of Gamma-Ray Loud AGN, 7th Intern. Symposium on High-Energy Gamma-Ray Astronomy, Barcelona, July 2022
- Ultra-High Energy Cosmic Rays from Relativistic AGN Jets, Golden Univ. Conference, Vietnam, July 2022
- Supermassive Black Holes as Cosmic Particle Accelerators, Seminar, IPP Garching, September 2022
- Supermassive Black Holes as Cosmic Particle Accelerators, Seminar, IAP Paris, December 2022
- Supermassive Black Holes as Cosmic Particle Accelerators, Observatoire Paris-Meudon, December 2022
- Particle Acceleration in Relativistic Shearing Flows, CDY Spring Series, February 2023
- Particle Acceleration in Relativistic Outflows in Gamma-Ray Binaries, VGGRS Workshop, Innsbruck, April 2023
- The Galactic Center Black Hole as Cosmic Particle Accelerator, Workshop on UHE Gamma-Rays, Yerevan, October 2023.
- VHE Flares in Blazars and Radio Galaxies, CDY Workshop on BH Flares, New York, November 2023
- Extragalactic Science (Rapporteur), 8th Intern. Symposium on High-Energy Gamma-Ray Astronomy, Milano, September 2024

Reviewing

- Referee for scientific journals: ApJ, MNRAS A&A, APh, Ap&SS, EJPh, IJMPD, PASA, NewAR, Galaxies
- Referee for funding agencies: Deutsche Forschungsgemeinschaft (DFG), Grant Agency of the Academy of Science of the Czech Republic, National Science Centre Poland, DIM ACAV+ France, National Science Foundation of South Africa, Science and Technology Facilities Council (UK)
- Referee for Alexander von Humboldt Stiftung, Deutsche Physikalische Gesellschaft (Prize)

Teaching and supervision

- Privat-Dozent, Univ. Heidelberg (Habilitation 2014):
 - regular lecture courses and seminars on High Energy Astrophysics, Cosmic Particle Accelerators, Particle Acceleration in Astrophysical Plasma, and Astroparticle Physics.
- Supervisor of PhD students at MPIK, Univ. Heidelberg and IPP, TUM Garching
- lecturer at 47th Heidelberg Physics Graduate Days (Heidelberg 2021), the Taiwan Astronomy Winter School (Taiwan 2021), the ISAPP Summer School (Heidelberg 2019) and the Dublin Summer School on High Energy Astrophysics (Dublin 2011 & 2018)

Organization of international conferences

- 8th International Symposium on High-Energy Gamma-Ray Astronomy, Milano 2024
- 15th Intern. Symposium for Space Simulations & 16th Intern. Workshop on the Interrelationship between Plasma Experiments in the Laboratory and in Space, Garching 2024 [Co-Chair LOC]
- High Energy Phenomena in Relativistic Outflows, Paris 2023
- 7th International Symposium on High-Energy Gamma-Ray Astronomy, Barcelona 2022 [Co-Chair LOC]
- 30th Texas Symposium on Relativistic Astrophysics, Portsmouth 2019
- Very High Energy Phenomena Around Supermassive Black Holes, Yerevan 2019 [Chair].
- International Conference on Black Holes as Cosmic Batteries, Foz do Iguau, Brazil 2018
- 29th Texas Symposium on Relativistic Astrophysics, Cape Town 2017
- 6th International Symposium on High-Energy Gamma-Ray Astronomy, Heidelberg 2016 [Co-Chair LOC & Editor of Proceedings].
- 28th Texas Symposium on Relativistic Astrophysics, Geneva 2015
- 27th Texas Symposium on Relativistic Astrophysics, Dallas 2013
- 4th Meeting on High Energy Phenomena in Relativistic Outflows, Heidelberg 2013 [SOC/Chair LOC & Editor of Proceedings].
- 5th International Symposium on High-Energy Gamma-Ray Astronomy, Heidelberg 2012 [Co-Chair LOC & Editor of Proceedings].
- 25th TEXAS Symposium on Relativistic Astrophysics, Heidelberg 2010 [Co-Chair LOC & Editor of Proceedings].
- The GeV to TeV Connection, Ringberg 2010
- High Energy Gamma-Rays and Neutrinos from Extra-Galactic Sources, Heidelberg 2009
- 4th International Symposium on High Energy Gamma-Ray Astronomy, Heidelberg 2008 [LOC & Editor of Proceedings].
- High Energy Phenomena in Relativistic Outflows, Dublin 2007 [Co-Chair LOC & Editor of Proceedings].

Public Outreach

- Organizer of Public Science Lectures, Stadthalle Heidelberg (R. Genzel, M. Longair, H. Lesch)
- Science & Public Outreach Event with the President of Armenia (2019)
- Contributor Jahrbuch der Max-Planck-Gesellschaft (2012), Einstein Online (2014), Physik Journal (2019), Quanta Magazine/Interview (2021).

Ten most important publications

- G. Katsoulakos, F.M. Rieger, *Gap-type Particle Acceleration in the Magnetospheres of Rotating Supermassive Black Holes*, *Astrophys. J.* 895 (2020), 99
- H.E.S.S. Collaboration (Abdalla et al.), *Resolving acceleration to very high energies along the jet of Centaurus A*, *Nature* 582 (2020), 356
- F.M. Rieger, *An Introduction to Particle Acceleration in Shearing Flows*, *Galaxies* 7 (2019), 78 (invited review)
- R.-Y. Liu, F.M. Rieger, F.A. Aharonian, *Particle Acceleration in Mildly Relativistic Shearing Flows: The Interplay of Systematic and Stochastic Effects, and the Origin of the Extended High-energy Emission in AGN Jets*, *Astrophys. J.* 842 (2017), 39
- F.M. Rieger, E. de Ona-Wilhelmi & F.A. Aharonian, *TeV Astronomy*, *Frontiers of Physics* 8, 714 (2013) (invited review).
- Levinson A., Rieger F.M., *Variable TeV emission as a manifestation of jet formation in M87?*, *Astrophys. J.* 730 (2011), 123
- E. Lefa, F.M. Rieger, and F. Aharonian, *Formation of Very Hard Gamma-Ray Spectra in Blazars in Leptonic Models*, *Astrophys. J.* 740 (2011), 64.
- F.M. Rieger, F.A. Aharonian, *Variable VHE emission from non-blazar AGNs*, *Astron. Astrophys.* 479 (2008), L5.
- F.M. Rieger, P. Duffy, *Shear acceleration in relativistic astrophysical jets*, *Astrophys. J.* 617 (2004), 155.
- J.G. Kirk, F.M. Rieger & A. Mastichiadis, *Particle acceleration and synchrotron emission in blazar jets*, *A&A* 333 (1998), 452