Giacomo Principe

Curriculum Vitae

Personal information

Date of birth	July 26, 1991.
Place of birth	Mirano (VE), Italy.
Citizenship	Italian, EU.
Present position	Research fellow at Università di Trieste, Trieste, Italy.

Education and Research Experience

Nov 2021 - now **Coordinator of the EHT-MWL project for M87-2018 observations**.

Oct. 2021 - now **Coordinator of the development of the first CTAO Science Data Challenge**.

Sept. 2019 - now **Coordinator of the *Calibration and Analysis* group of the *Fermi*-LAT collaboration**.

Oct. 2020 - now **Research fellow in Astroparticle Physics**,
Department of Physics, Università di Trieste, Trieste, Italy.
INFN (Trieste) associated.

Research topics:
- *Investigating the transient and multi-messenger sources seen by Fermi-LAT*
- *Search for the high energy emission from Fast Radio Bursts with Fermi-LAT*
- *Developing the first Science Data Challenge of CTAO.*

Oct. 2018 - Sept. 2020 **Research fellow in Astroparticle Physics**,
INAF Istituto di Radioastronomia, Bologna, Italy.

Research topics:
- *Investigating the connection between radio and high energy emission in Fermi-LAT sources*
- *Investigating the gamma-ray emission of multi-messanger sources with Fermi-LAT sources*
- *Search for the high energy emission from young radio galaxies with Fermi-LAT*
- *Studying the evolution of the young radio source NGC 3894 in radio and γ-rays*

PI of two successfully proposals for radio (EVN, eMERLIN) observations of AGNs.

Jan. 2016 - Sept. 2018 **PhD in Astroparticle Physics**,
ECAP - University of Erlangen and Nuremberg (FAU), Germany.

PhD Defense on March 29th, 2019, with a final mark *"Magna cum laude"*.

PhD topics:
- *Point source analysis with a wavelet transform method*
- *The first catalog of Fermi-LAT sources below 100 MeV*
- *The energy dependent morphology of the PWN HESS J1825-137 seen by Fermi LAT*
- *Developing of the FlashCam camera for the MSTs of CTA*

Advisor: Prof. Dr. S. Funk, co-advisors: Dr. D. Malyshev, Dr. I. Jung

Oct. 2013 - Oct. 2015 **Master degree in Physics**,
Università degli Studi di Padova, Padua, Italy.

Final Score: 110/110.

Master's thesis: *"Space and Time Clustering of High-Energy Photons detected by the Fermi LAT"*.

Advisors: Prof. D. Bastieri, Dr. S. Buson.

Oct. 2010 - Jul. 2013 **Bachelor degree in Physics**,
Università degli Studi di Padova, Padua, Italy.
Bachelor's thesis: *"Analysis of 1ES 1959+650 in a multi-wavelength context with Fermi LAT"*.
Advisors: Prof. D. Bastieri, Dr. S. Buson.

Research Statement

My research activity, lasting about 6.5 years, focuses on the detection and study of astrophysical sources emitting gamma-rays.
The main topic of my PhD thesis was the development of point source analyses (in the publications list, see publ. n.° 22,54,l). I developed the pipeline for point source analysis with the use of PGWave, a very efficient tool which makes use of wavelet transforms to find significant clusters of gamma rays. Following this activity, I worked on the creation of the first catalog of *Fermi*-LAT sources below 100 MeV (see publ. n.° 28,h,i), an energy band almost totally unexplored, because dominated by the background emission, but of crucial importance for the populations of "soft" sources that will play a key role in the future missions dedicated to MeV energies. This study provided the foundations for the extension to lower energies in the search for point sources in background dominated regions with *Fermi*-LAT (e.g. for the creation of the 4FGL catalog, for the study of the region around the Galactic Center, see publ. n.° 18,41,42). Similar methods, with quick and reliable tools for point source analysis, turned out to be very suitable for searching multi-messanger transients events, such as investigating the counterparts of neutrinos or gravitational wave events (e.g. for studying the gamma-ray emission of the flaring blazar coincident with IceCube-170922A, and for the study of gamma-ray emission from the binary neutron star connected to GW170817, see publ. n.° 32,47,49).
In addition to the point source studies, I worked on the analysis of Galactic extended sources seen by *Fermi* LAT, such as the pulsar wind nebula (PWN) HESS J1825-137, the largest PWN currently known. Beyond the spectral and morphological analysis, I performed the first energy dependent morphological study at GeV energies of this interesting source. These results enabled us to constrain the particle transport mechanisms and to investigate the PWN - TeV halo nature of this source (see publ. n.° 15,37,g).
As part of my PhD I have contributed also to the development of the next ground based telescopes for the gamma-ray detection: the Cherenkov Telescope Array (CTA). In particular, I was involved in the design and verification of the FlashCam camera for the medium-size telescopes of CTA (see publ. n.° 12,14,26,39,k).
During my research fellowship at the INAF-IRA, I have studied the connection between radio and gamma-ray emission of extragalactic radio sources in order to constrain the origin of the high energy photons from radio galaxies (see publ. n.° 44,50,53). Within the Event Horizon Telescope MWL collaboration, where I am responsible for the *Fermi*-LAT observations, I investigated the connection between the high energy emission and the very inner part (down to the super-massive black hole) of AGN (see publ. n.° 10,c). In particular, part of my research was devoted to the study of the compact and young radio objects (i.e. the proposed progenitors of large radio galaxies) which are expected to emit up to gamma rays. I performed the first stacking analysis of *Fermi*-LAT data of a sample of young radio galaxies, in order to characterise their gamma-ray properties and with aim of investigating the origin of the high energy photons from young radio galaxies (see publ. n.° 7,16,e,f). Finally, in order to study the evolution of these peculiar young radio sources, I have applied, as PI, for two radio proposals, for eMERLIN (European radio interferometer) and EVN (European VLBI network) observations, which have been recently accepted.
With the begin of my research fellowship at the University of Trieste, I have resumed the study of point sources focusing on transient events, ranging from nearby stellar flares to cosmological fast radio burst (FRBs) and gamma-ray bursts (GRBS), seen by *Fermi*-LAT (see publ. n.° 24,31). Following the detection of GeV photons from Solar flares (see publ. n.° 12,30), I have investigated the high-energy emission of stellar super-flares, which can have a huge impact on the habitability in nearby exoplanets. Moving to cosmological objects, I have searched for the high energy emission from FRBs using a stacking analysis, aiming to unveil the nature of these misterious phenomena (see publ. n.° d). In addition, since October 2021 I am collaborating with CTAO where I am responsible of the effort for the development of the first CTAO data challenge.
Starting from September 2019, I am specially contributing to the *Fermi*-LAT collaboration as coordinator of the *Calibration and Analysis* science group (see also publ. n.° 2,7). Similarly, since November 2021, I am contributing to the EHT-MWL working group coordinating the effort for M87 project, in particular the leading the work for

the publication of 2018 MWL observations.
Thanks to the development of an innovative background independent method, my research has unveiled the almost totally unexplored MeV sky. This work represents a pioneering example for other point source studies and for future missions dedicated to the sky observation at these energies. Similarly, the investigation of the energy dependent morphology of the PWN HESS J1825-137 down to GeV energies has expanded the frontiers of the study of particle acceleration mechanisms and TeV halo formation in Galactic sources. The great impact of the study of the first moments of life of a relativistic jet in an active galactic nucleus is related to the possibility of understanding the coevolution of black holes and galaxies. Finally, unveiling the high energy emission of flaring and very energetic phenomena can provide fundamental information on the sites of most efficient particle acceleration mechanisms.

Conferences

2016-now *Author of 4 invited talks, 14 talks and 6 posters at international conferences.*

July 2022 **Hands on the extreme Universe with HE gamma-rays (Sexten)**
Invited talk: *'The Fermi view of the high energy sky'.*

July 2022 **Gamma-ray Symposium 2022 (Barcelona)**
Talk: *'Hunting the gamma-ray emission from Fast Radio Burst with Fermi-LAT'.*

March 2022 **Les Rencontres de Physique de la Vallée d'Aoste (La Thuile)**
Invited talk: *'The Fermi Gamma Ray Sky: Summary of recent Observations'.*

October 2021 **High Energy Astrophysics Division (HEAD) Frontiers seminars (virtual)**
Invited talk: *'Energy-dependent morphology of the PWN HESS J1825-137 seen by Fermi-LAT'.*

September 2021 **Italian Physics society (SIF) congress (virtual)**
Talk: *'Gamma-ray emission from young radio galaxies and quasars'.*
Talk: *'Hunting the gamma-ray emission from Fast Radio Burst with fermi-LAT'.*

July 2021 **37th International Cosmic Ray Conference (ICRC) (virtual)**
Talk: *'Gamma-ray emission from young radio galaxies and quasars'.*
Poster: *'Hunting the gamma-ray emission from Fast Radio Burst with fermi-LAT'.*
Proceedings: published in Proceedings of Science for the ICRC2021.

June 2021 **JETS-2021 conference (virtual)**
Talk: *'Gamma-ray emission from young radio galaxies and quasars'.*

June 2021 **238th AAS Meeting (virtual)**
Talk: *'Multi-wavelength View of the M87 Black Hole captured by EHT'.*
Proceedings: published in Research Notes of the AAS (RNAAS).

May 2021 **6th CSS-GPS Workshop (virtual)**
Talk: *'Gamma-ray emission from young radio galaxies and quasars'.*
Proceeding: published in Astronomische Nachrichten for CSS-GPS workshop.

April 2021 **9th *Fermi*-LAT Simposium (virtual)**
Poster: *'Gamma-ray emission from young radio galaxies and quasars'.*

December 2020 **First Workshop on gamma-ray Halo (virtual)**
Poster: *'The energy-dependent morphology of the PWN HESS J1825-137 seen by Fermi-LAT*: investigating its PWN - TeV Halo:'.

November 2020 **Conference on Astrophysics and Space Research (CASR2020, virtual)**
Invited talk: *'The archetypal pulsar wind nebula HESS J1825-137 seen by Fermi-LAT'.*

October 2020 **First Italian Space Agency workshop on Astrobiology (virtual)**
Co-author of a talk: *'Search for high energy emission from stellar flares with Fermi-LAT'.*

July 2019 **35th International Cosmic Ray Conference (Madison).**
Talk: *'The energy dependent morphology of the PWN HESS J1825-137 seen by Fermi-LAT'.*
Proceeding: published in AIP conference proceedings.

May 2019 **1st CTA simposium (Bologna).**
Poster: *'Energy dependent morphology of the Pulsar Wind Nebula HESS J1825-137 seen by Fermi-LAT'.* Poster: *'Lessons learnt from a single source: The HESS J1825-137 pulsar wind nebula - a case study.*

April 2019 **EATING VLBI Workshop (Bologna).**
Talk: *'The connection between radio and gamma sources: the Fermi-LAT low energy catalog'.*

October 2018 **8th *Fermi* Symposium (Baltimore).**
Plenary Talk: *'The first catalog of Fermi-LAT sources below 100 MeV'.*

August 2018 **TeVPA conference 2018 (Berlin).**
Talk: *'The first catalog of Fermi-LAT sources below 100 MeV'.*

March 2018 **DPG 2018 (Würzburg).**
Talk: *'The first catalog of Fermi-LAT sources below 100 MeV'.*

December 2017 **AGILE Symposium 2018 (Rome).**
Poster: *'The first catalog of Fermi-LAT sources below 100 MeV'.*
Proceeding: published in the Journal of the Accademia dei Lincei ("Rendiconti Lincei", Springer).

October 2017 **7th *Fermi* Symposium (Garmisch-Partenkirchen).**
Talk: *'Towards the first catalog of Fermi-LAT sources below 100 MeV'.*
Proceeding: published in Proceedings of Science for the 7th International Fermi Symposium.

July 2016 **Gamma Symposium 2016 (Heidelberg).**
Poster: *'Point Source Detection and Flux Determination with PGWave'.*
Proceeding: published in AIP conference proceedings.

Lectures

September 2022 Invited for aa talk at the **Physics Department - University of Nova Gorica**.
Talk: *'The first catalog of Fermi-LAT sources below 100 MeV and future perspective for studies in the MeV band'.*

May 2021 Invited for an online talk at the **INAF - Osservatorio Trieste**.
Talk: *'Gamma-ray emission from young radio galaxies and quasars'.*

April 2020 Invited for an online talk at the **Astronomy Department - University of Bologna**.
Talk: *'The energy dependent morphology of the PWN HESS J1825-137 seen by Fermi-LAT'.*

October 2019 Invited for a talk at the **Physics Department - University of Torino**.
Talk: *'The energy dependent morphology of the PWN HESS J1825-137 seen by Fermi-LAT'.*

May 2018 Invited for a talk at the **Physics Department - University of Perugia**.
Talk: *'The first catalog of Fermi-LAT sources below 100 MeV'.*

Organised conferences - workshops

September 2022 Local organizer of the '5th National Congress of GRBs' (Trieste, September 2022).

July 2022 Scientific organizer of the Sexten 2022 workshop 'Hands on the extreme Universe with high energy gamma rays' (Sexten, July 2022).

April 2019 Local organizer of the EATING-VLBI Workshop (Bologna, April 2019).

October 2016 Responsible for the organisation of the FRANCI 2017 workshop. One day meeting with the astroparticle groups of the German-Franconia Universities.

Collaborations

2021 - now Collaborating with the Cherenkov Telescope Array Observatory (**CTAO**)).

2020 - now Active member of the Major Atmospheric Gamma Imaging Cherenkov Telescopes (**MAGIC**) collaboration.

2019-now Active member of the multiwavelength group - Event Horizon Telescope (**EHT-MWL**) collaboration, and responsible for the high-energy observations.

2016-now Active member of the *Fermi* Large Area Telecope (***Fermi*-LAT**) and Cherenkov Telescope Array (**CTA**) collaborations.

2016-2019 Member of the **FlashCam** group for the development of new cameras for Cherenkov telescopes.

Coordinator roles

Nov. 2021 - now **Coordinator** of the EHT-MWL project for M87-2018 observations.

Oct. 2021 - now **Coordinator** of the development of the first CTAO Science Data Challenge.

2019 - now **Coordinator** of the *Calibration and Analysis* working group of the *Fermi*-LAT coll.

Grants-Nomination

2022 Included in the short-list for a RTDb position at University of Trieste

2020 Included in the short-list for a RTDa position at University of Trieste

2020 Winner of the PRIN-INAF 2019 for an amount of 30k euro, with a project on ""Astronomy for equity, diversity and inclusion"

Teaching

March 2022 - July 2022 Teaching assistant - **Electrodynamics** - Physics Dep. Trieste (30 hours)

Sept. 2021 - Feb. 2022 Teaching assistant - **Electromagnetism** - Physics Dep. Trieste (30 hours)

February 2021 Teaching at the PhD school (4 hours) - University of Padova **Lesson on the analysis of Fermi-LAT data**, https://agenda.infn.it/event/25267/contributions/

Dec. 2020 - Jun. 2021 Teaching assistant - **Electromagnetism and Electrodynamics** - Physics Dep. Trieste (40 hours)

Summer s. 2018 Teaching assistant - **Laboratory of fundamental physics** - Bachelor (40 hours)
Experiments: electrical resistance, X-ray, ideal gases, spectrometer and magnetic induction.

Winter s. 2017 Teaching assistant - **Laboratory of fundamental physics** - Bachelor (40 hours)
Experiments: see Summer s. 2018

Summer s. 2017 Teaching assistant - **Advanced particle physics** - Master (40 hours)
Topics: Covariant description of relativistic particles, QED of spin-less particles and of spin-1/2 particles, weak interactions, physics of massive neutrinos, towards the Standard Model of Particle Physics, the Higgs mechanism, beyond the Standard Model.

Winter s. 2016 Teaching assistant - **Nuclear and particle physics** - Bachelor (40 hours)
Topics: experimental methods; nuclear physics, nucleons, hadrons and strong interaction; weak interaction; neutrino oscillations.

Summer s. 2016 Teaching assistant - **Advanced particle physics** - Master (40 hours)
Topics: see topics of the teaching experience Summer s. 2017.

Thesis or Internship Advisor

Oct. 2021 - now Co-advisor of the master thesis of Stefano Salvador, University of Trieste, on 'Search for high energy emission from Magnetars flare with *Fermi*-LAT.'

Oct. 2021 - now Co-advisor of the bachelor thesis of Elena Celotti, University of Trieste, on 'The gamma-ray emission from SGR 1953+2154 seen by *Fermi*-LAT.'

Nov. 2020 - Dec. 2021	Co-advisor of the bachelor thesis of Nicola Perin, University of Trieste, on 'Study of the gamma-ray emission of the radio galaxy M87, during the EHT-MWL campaign in 2018, with *Fermi*-LAT.'
Oct. 2020 - Dec. 2021	Co-advisor of the bachelor thesis of Pierfrancesco Menia, University of Trieste, on 'Search for high energy emission from Fast Radio Burst with *Fermi*-LAT.'
Jan. 2021 - Jul. 2021	Tutor for the INFN-Trieste of the internship of Francesco Piccoli, on the study and development of Geant software for particle interaction/acceleration.
Oct. 2021 - May 2022	Tutor for the INFN-Trieste of the internship of Tiziano Pauletto, on the development of new tool for searching space and time cluster of gamma-ray photons seen by *Fermi*-LAT.
Nov. 2021 - May 2022	Tutor for the INFN-Trieste of the internship of Samantha Morales, on the study of the gammapy python library for analysis of MAGIC data.

Summer Schools

November 2020	CASA-VLBI workshop (virtual / Gothenburg - Sweden)
October 2019	ERIS - European school for radio interferometry (Gothenburg - Sweden)
July 2017	Gamma Ray Astrophysics with CTA (Sexten - Italy)
October 2016	School for astroparticle physics (Obertrubach-Bärnfels - ECAP - Germany)

Outreach

Dec. 2021	Organizer and speaker at the national Fermi-Masterclass (online), involving more than thousands students from secondary schools.
Oct. 2019	Long Night of Research 2019 (Bologna): participation as a scientific animator for educational experiments proposed to the public.
Sept. 2019	Organizer of a scientific exhibition for school children on the: "The Invisible Universe", at the event "Festa dei Bambini", Bologna.
2018 - 2020	Scientific guide at Medicina (Bologna) Radio Telescopes Visitor Center "Marcello Ceccarelli".
Oct. 2017	Long Night of Research 2017 (Erlangen): participation as a scientific animator for educational experiments proposed to the public.
2015 - now	More than fifty public lectures given in universities, schools or cultural centres presenting recent astrophysics results and the beauty of the Universe.

Extracurricular Activities

Oct. 2020 - now	Elected member, as research fellow representative, in the Department of Physics of the University of Trieste.
2014	Elected member, as student representative, in the Board of Directors of the University of Padua ("Consiglio di Amministrazione").
2011-2015	Elected member, as student representative, in the Department of Physics and Astronomy of the University of Padua.

Languages

Italian	*Native*
English	*Fluent*
German	*Fluent*

All publications

Bibliometric index: H-index = 28, citations = 7652, taken from Google Scholar on 13/9/2022.

Contact author of seven publications (see publ. n. 7,9,14,15,21,27,53), 11 proceedings and 12 rapid publications.

1. Abdollahi, S., Acero, F., Ackermann, M., et al.; *Search for New Cosmic-Ray Acceleration Sites within the 4FGL Catalog Galactic Plane Sources*, 2022, Astrophysical Journal933, 2, 204, 29
2. Ajello, M., Atwood, WB., Baldini, L., et al.; *A Gamma-ray Pulsar Timing Array Constrains the Nanohertz Gravitational Wave Background*, 2022, Science, DOI: 10.1126/science.abm3231
3. Engel K., et al.; *Advancing the Landscape of Multimessenger Science in the Next Decade*, 2022, Snowmass 2021 white paper
4. Engel K., et al.; *The Future of Gamma-Ray Experiments in the MeV-EeV Range*, 2022, Snowmass 2021 white paper
5. Fermi-LAT Coll., et al.; *Incremental Fermi Large Area Telescope Fourth Source Catalog*, 2022, Astrophysical Journal Supplement, 260, 2, 53,24
6. Fermi-LAT Coll., et al.; *Gamma Rays from Fast Black-hole Winds*, 2021, Astrophysical Journal, 921, 2, 144
7. Fermi-LAT Coll., et al.; *The Fermi-LAT Instrument Performance After 10 Years Of Operation*, 2021, Astrophysical Journal Supplement, 256
8. Principe, G. Di Venere, L, Orienti, M. et al.; *Gamma-ray emission from young radio galaxies and quasars*; 2021, Monthly Notices of the Royal Astronomical Society, 507, 3
9. Fermi-LAT coll.; *Catalog of Long-Term Transient Sources in the First 10 Years of Fermi-LAT Data*; 2021, Astrophysical Journal Supplement, 256 13
10. EHT-MWL working group, et al.; *Broadband Multi-wavelength Properties of M87 during the 2017 Event Horizon Telescope Campaign*; 2021, Astrophysical Journal Letters, 911,11E
11. Fermi-LAT coll.; *High-energy emission from a magnetar giant flare in the Sculptor galaxy*; 2021, Nature Astronomy, 11F
12. CTA consortium; *Sensitivity of the Cherenkov Telescope Array for probing cosmology and fundamental physics with gamma-ray propagation*; 2021, JCAP, 02.048A
13. Fermi-LAT coll.; *First Fermi-LAT Solar Flare Catalog*; 2021, Astrophysical Journal252,13A
14. CTA consortium; *Sensitivity of the Cherenkov Telescope Array to a dark matter signal from the Galactic centre*; 2021, JCAP, 01.058A
15. Principe G., et al.; *Energy dependent analysis of the Pulsar Wind Nebula HESS J1825-137 with Fermi-LAT*; 2020,Astronomy and Astrophysics, 640, 13
16. Principe, G., et al.; *NGC3894: a young radio galaxy seen by Fermi-LAT*; accepted by Astronomy and Astrophysics 2020, Astronomy and Astrophysics, 635, 6
17. Ajello, M., Arimoto, M., Axelsson, M., et al.; *The Fourth Catalog of Active Galactic Nuclei Detected by the Fermi Large Area Telescope*, 2020, Astrophysical Journal, 892, 2, 23
18. Abdollahi, S., Acero, F., Ackermann, M., et al.; *Fermi Large Area Telescope Fourth Source Catalog*, 2020, Astrophysical Journal Supplement, 247, 1, 37
19. Ajello, M., Arimoto, M., Axelsson, M., et al.; *Fermi and Swift Observations of GRB 190114C: Tracing the Evolution of High-energy Emission from Prompt to Afterglow* 2020, Astrophysical Journal, 890, 9
20. Ajello, M., Arimoto, M., Axelsson, M., et al.; *Bright Gamma-Ray Flares Observed in GRB 131108A*; 2019, Astrophysical Journal Letters, 886, L33

21. Ajello, M., Baldini, L., Barbiellini, G., et al.; *A Search for Cosmic-Ray Proton Anisotropy with the Fermi Large Area Telescope*; 2019, Astrophysical Journal, 883, 33

22. Principe, G.; *Doctoral Thesis: The extremes of the Fermi-LAT energy ranges: the Fermi Low Energy (1FLE) catalog and a detailed investigation of HESS J1825-137 above 100 GeV*; Friedrich-Alexander-Universität Erlangen-Nürnberg (FAU), 2019, urn:nbn:de:bvb:29-opus4-122651

23. Sailer, S., Werner, F., Hermann, G., et al.; *Trigger performance verification of the FlashCam prototype camera*; 2019, Nuclear Instruments and Methods in Physics Research A, 936, 392

24. Ajello, M., Arimoto, M., Axelsson, M., et al.; *A Decade of Gamma-Ray Bursts Observed by Fermi-LAT: The Second GRB Catalog*; 2019, Astrophysical Journal, 878, 52

25. Ahnen, M. L., Ansoldi, S., Antonelli, L. A., et al.; *MAGIC and Fermi-LAT gamma-ray results on unassociated HAWC sources*; 2019, Monthly Notices of the Royal Astronomical Society, 485, 356

26. Cherenkov Telescope Array Consortium, Acharya, B. S., Agudo, I., et al.; *Science with the Cherenkov Telescope Array*; 2019, CTA Book

27. Ackermann, M., Ajello, M., Baldini, L., et al.; *Unresolved Gamma-Ray Sky through its Angular Power Spectrum*; 2018, Physical Review Letters, 121, 241101

28. Principe, G., Malyshev, D., Ballet, J., et al.; *The First Catalog of Fermi-LAT sources below 100 MeV*; 2018, Astronomy and Astrophysics, 618, A22

29. Abeysekara, A. U., Archer, A., Benbow, W., et al.; *VERITAS and Fermi-LAT Observations of TeV Gamma-Ray Sources Discovered by HAWC in the 2HWC Catalog*; 2018, Astrophysical Journal, 866, 24

30. Ackermann, M., Ajello, M., Baldini, L., et al.;*The Search for Spatial Extension in High-latitude Sources Detected by the Fermi Large Area Telescope*; 2018, Astrophysical Journal Supplement, 237, 32

31. Ajello, M., Baldini, L., Barbiellini, G., et al.; *Investigating the Nature of Late-time High-energy GRB Emission through Joint Fermi/Swift Observations*; 2018, Astrophysical Journal, 863, 138

32. IceCube Collaboration, Aartsen, M. G., Ackermann, M., et al.; *Multimessenger observations of a flaring blazar coincident with high-energy neutrino IceCube-170922A*; 2018, Science, 361, eaat1378

33. Ajello, M., Allafort, A., Axelsson, M., et al.; *Fermi-LAT observations of the LIGO/Virgo event GW170817*; 2018, Astrophysical Journal, 861, 85

34. Ackermann, M., Atwood, W. B., Baldini, L., et al.; *Search for Gamma-Ray Emission from Local Primordial Black Holes with the Fermi Large Area Telescope*; 2018, Astrophysical Journal, 857, 49

35. Clark, C. J., Pletsch, H. J., Wu, J., et al.; *Einstein@Home discovers a radio-quiet gamma-ray millisecond pulsar*; 2018, Science Advances, 4, eaao7228

36. Fermi-LAT Collaboration, Abdollahi, S., Ackermann, M., et al.; *A gamma-ray determination of the Universe's star formation history*; 2018, Science, 362, 1031

37. Ackermann, M., Ajello, M., Baldini, L., et al.; *Search for Extended Sources in the Galactic Plane Using Six Years of Fermi-Large Area Telescope Pass 8 Data above 10 GeV*; 2017, Astrophysical Journal, 843, 139

38. Abdollahi, S., Ackermann, M., Ajello, M., et al.; *The Second Catalog of Flaring Gamma-Ray Sources from the Fermi All-sky Variability Analysis*; 2017, Astrophysical Journal, 846, 34

39. Werner, F., Bauer, C., Bernhard, S., et al.; *Performance verification of the FlashCam prototype camera for the Cherenkov Telescope Array*; 2017, Nuclear Instruments and Methods in Physics Research A, 876, 31

40. Ackermann, M., Allafort, A., Baldini, L., et al.; *Fermi-LAT Observations of High-energy Behind-the-limb Solar Flares*; 2017, Astrophysical Journal, 835, 219

41. Ajello, M., Atwood, W. B., Baldini, L., et al.; *3FHL: The Third Catalog of Hard Fermi-LAT Sources*; 2017, Astrophysical Journal Supplement, 232, 18

42. Ackermann, M., Ajello, M., Albert, A., et al.; *The Fermi Galactic Center GeV Excess and Implications for Dark Matter*; 2017, Astrophysical Journal, 840, 43

43. Abdollahi, S., Ackermann, M., Ajello, et al.; *Search for Cosmic-Ray Electron and Positron Anisotropies with Seven Years of Fermi Large Area Telescope Data*; 2017, Physical Review Letters, 118, 9

44. Abdollahi, S., Ackermann, M., Ajello, M., et al.; *Cosmic-ray electron-positron spectrum from 7 GeV to 2 TeV with the Fermi Large Area Telescope*; 2017, Physical Review D, 95, 082007

45. H. E. S. S. Collaboration, Abdalla, H., Abramowski, A., et al.; *Gamma-ray blazar spectra with H.E.S.S. II mono analysis: The case of PKS 2155-304 and PG 1553+113*; 2017, Astronomy and Astrophysics, 600, A89

46. Acero, F., Aloisio, R., Amans, J., et al.; *Prospects for Cherenkov Telescope Array Observations of the Young Supernova Remnant RX J1713.7-3946*; 2017, Astrophysical Journal, 840, 74

47. Racusin, J. L., Burns, E., Goldstein, A., et al.; *Searching the Gamma-Ray Sky for Counterparts to Gravitational Wave Sources: Fermi GBM and LAT Observations of LVT151012 and GW151226*; 2017, Astrophysical Journal, 835, 82

48. Abbott, B. P., Abbott, R., Abbott, T. D., et al.; *Multi-messenger Observations of a Binary Neutron Star Merger*; 2017, Astrophysical Journal Letters, 848, L12

49. Goldstein, A., Veres, P., Burns, E., et al.; *Fermi Observations of the LIGO Event GW170104*; 2017, Astrophysical Journal Letters, 846, L5

50. Ackermann, M., Ajello, M., Albert, A., et al.; *Observations of M31 and M33 with the Fermi Large Area Telescope: A Galactic Center Excess in Andromeda*; 2017, Astrophysical Journal, 836, 208

51. Ackermann, M., Ajello, M., Baldini, L., et al.; *Gamma-Ray Blazars within the First 2 Billion Years*; 2017, Astrophysical Journal Letters, 837, L5

52. Ackermann, M., Anantua, R., Asano, K., et al.; *Minute-scale variability during the spectacular outburst of quasar 3C279 observed by Fermi-LAT in June 2015*; 2016, Astrophysical Journal Letters, 824, L20

53. Principe G.; Master thesis:*Space and Time Clustering of High-Energy Photons detected by the Fermi LAT*; 2015, University of Padova, Department of Physics

List of proceedings

a Principe, G.; *The Fermi Gamma Ray Sky: summary of recent observations*, 2022, Nuovo Cimento C

b Zanin, R., et al.; *CTA – the World's largest ground-based gamma-ray observatory* 2022, PoS(ICRC2021), 395

c Principe, G., et al.; *Multi-wavelength view of the M87 black hole captured by Event HorizonTelescope*; 2021, RNAAS, 5, 1,221

d Principe, G., et al.; *The gamma-ray emission of young radio galaxies*; 2021, Astronomische Nachrichten, 342, 1176

e Principe, G., et al.; *Hunting the gamma-ray emission from Fast Radio Burst with Fermi-LAT*; 2021, PoS(ICRC2021), 624

f Principe, G., et al.; *Gamma-ray emission of young radio galaxies: the flaring episode of the peculiar galaxy PKS B1413+135*; 2021, PoS(ICRC2021), 597

g Principe, G., Mitchell, A., Hinton, J., et al.; *Energy-dependent morphology of the pulsar wind nebula HESS J1825-137 seen by Fermi-LAT*; 2019, PoS(ICRC2019), 595

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Trieste, 13.9.2022 **Giacomo Principe**

Autorizzo il trattamento dei dati personali nelle modalità previste dal Regolamento UE 2016/679