

## LIST OF PUBLICATIONS

Krzysztof Nalewajko  
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### Refereed journals

1. **K. Nalewajko** „*Tension of toroidal magnetic field in reconnection plasmoids and relativistic jets*”, 2025, A&A accepted, [arXiv:2502.14954](https://arxiv.org/abs/2502.14954)
2. **K. Nalewajko**, M. Kapusta, A. Janiuk „*Chaotic magnetic disconnections trigger flux eruptions in accretion flows channeled onto magnetically saturated Kerr black holes*”, 2024, [A&A, 692, A37](https://doi.org/10.1051/0004-6364/2024692a37)
3. D. A. Kann, N. E. White, G. Ghirlanda, S. R. Oates, A. Melandri, et al. „*Fires in the deep: The luminosity distribution of early-time gamma-ray-burst afterglows in light of the Gamow Explorer sensitivity requirements*”, 2024, [A&A, 686, A56](https://doi.org/10.1051/0004-6364/2024686a56)
4. B. Mishra, P. C. Fragile, J. Anderson, A. Blankenship, H. Li & **K. Nalewajko** „*The Role of Strong Magnetic Fields in Stabilizing Highly Luminous Thin Disks*”, 2022, [ApJ, 939, 31](https://doi.org/10.1086/7139)
5. A. A. Zdziarski, Ł. Stawarz, M. Sikora & **K. Nalewajko** „*A simple analytical model of magnetic jets*”, 2022, [MNRAS, 515, L17](https://doi.org/10.1093/mnras/stz317)
6. J. Ortuño-Macías, **K. Nalewajko**, D. A. Uzdensky, M. C. Begelman, G. R. Werner, A. Y. Chen & B. Mishra „*Kinetic Simulations of Instabilities and Particle Acceleration in Cylindrical Magnetized Relativistic Jets*”, 2022, [ApJ, 931, 137](https://doi.org/10.1086/7139)
7. A. G. Markowitz, **K. Nalewajko**, G. Bhatta, G. C. Dewangan, S. Chandra, et al. „*Rapid X-ray Variability in Mkn 421 during a Multiwavelength Campaign*”, 2022, [MNRAS, 513, 1662](https://doi.org/10.1093/mnras/stz317)
8. A. Goyal, M. Soida, Ł. Stawarz, P. J. Wiita, K. Nilsson, et al. „*Multiwavelength Variability Power Spectrum Analysis of the Blazars 3C 279 and PKS 1510-089 on Multiple Timescales*”, 2022, [ApJ, 927, 214](https://doi.org/10.1086/7139)
9. Q. Chen, **K. Nalewajko** & B. Mishra „*Scaling of magnetic dissipation and particle acceleration in ABC fields*”, 2021, [JPIPh, 87, 905870224](https://doi.org/10.1088/1367-2675/abf824)
10. M. Sikora, **K. Nalewajko** & G. M. Madejski „*On the significance of relativistically hot pairs in the jets of FR II radio galaxies*”, 2020, [MNRAS, 499, 3749](https://doi.org/10.1093/mnras/stz317)
11. J. Ortuño-Macías & **K. Nalewajko** „*Radiative kinetic simulations of steady-state relativistic plasmoid magnetic reconnection*”, 2020, [MNRAS, 497, 1365](https://doi.org/10.1093/mnras/stz317)
12. H.E.S.S., Fermi & NuSTAR Collaborations (H. Abdalla et al.) „*Simultaneous observations of the blazar PKS 2155-304 from ultra-violet to TeV energies*”, 2020, [A&A, 639, A42](https://doi.org/10.1051/0004-6364/2020639a42)
13. **K. Nalewajko**, M. Sikora & A. Różańska „*Orientation of the crescent image of M87\**”, 2020, [A&A, 634, A38](https://doi.org/10.1051/0004-6364/2020634a38)
14. **K. Nalewajko**, A. C. Gupta, M. Liao, K. Hryniewicz, M. Gupta & M. Gu „*Long-term optical spectroscopic variations of blazar 3C 454.3*”, 2019, [A&A, 631, A4](https://doi.org/10.1051/0004-6364/2019631a4)
15. R. Prince, N. Gupta & **K. Nalewajko** „*Two-zone emission modeling of PKS 1510-089 during the high state of 2015*”, 2019, [ApJ, 833, 137](https://doi.org/10.1086/7139)

16. **K. Nalewajko** „*Three-dimensional kinetic simulations of relativistic magnetostatic equilibria*”, 2018, [MNRAS, 481, 4342](#)
17. MAGIC Collaboration, Fermi-LAT Collaboration & MWL Collaborators „*Multi-wavelength characterization of the blazar S5 0716+714 during an unprecedented outburst phase*”, 2018, [A&A, 619, A45](#)
18. **K. Nalewajko**, Y. Yuan & M. Chruślińska „*Kinetic simulations of relativistic magnetic reconnection with synchrotron and inverse Compton cooling*”, 2018, [JPh, 84, 755840301](#)
19. G. R. Werner, D. A. Uzdensky, M. C. Begelman, B. Cerutti & **K. Nalewajko** „*Nonthermal particle acceleration in collisionless relativistic electron-proton reconnection*”, 2018, [MNRAS, 473, 4840](#)
20. **K. Nalewajko** „*Suborbital Fermi/LAT Analysis of the Brightest Gamma-Ray Flare of Blazar 3C 454.3*”, 2017, [Galaxies, 5\(4\), 100](#)
21. **K. Nalewajko** & M. Gupta „*The sequence of Compton dominance in blazars based on data from WISE and Fermi/LAT*”, 2017, [A&A, 606, A44](#)
22. M. Petropoulou, **K. Nalewajko**, M. Hayashida & A. Mastichiadis „*A hadronic minute-scale GeV flare from quasar 3C 279?*”, 2017, [MNRAS, 467, L16](#)
23. R. Itoh, **K. Nalewajko**, Y. Fukazawa, M. Uemura, Y. T. Tanaka et al. „*Systematic Study of Gamma-ray bright Blazars with Optical Polarization and Gamma-ray Variability*”, 2016, [ApJ, 833, 77](#)
24. G. M. Madejski, **K. Nalewajko**, K. K. Madsen, J. Chiang, M. Balokovic et al. „*First NuSTAR Observations of the BL Lac-type Blazar PKS 2155-304: Constraints on the Jet Content and Distribution of Radiating Particles*”, 2016, [ApJ, 831, 142](#)
25. Y. Yuan, **K. Nalewajko**, J. Zrake, W. E. East & R. D. Blandford „*Kinetic study of radiation-reaction-limited particle acceleration during the relaxation of unstable force-free equilibria*”, 2016, [ApJ, 828, 92](#)
26. M. Gupta, M. Sikora & **K. Nalewajko** „*Covering factors of the dusty obscurers in radio-loud and radio-quiet quasars*”, 2016, [MNRAS, 461, 2346](#)
27. **K. Nalewajko**, J. Zrake, Y. Yuan, W. E. East & R. D. Blandford „*Kinetic simulations of the lowest-order unstable mode of relativistic magnetostatic equilibria*”, 2016, [ApJ, 826, 115](#)
28. Fermi-LAT Collaboration „*Minute-timescale >100 MeV  $\gamma$ -Ray Variability during the Giant Outburst of Quasar 3C 279 Observed by Fermi-LAT in 2015 June*”, 2016, [ApJ, 824, L20](#)
29. G. R. Werner, D. A. Uzdensky, B. Cerutti, **K. Nalewajko** & M. C. Begelman „*The extent of power-law energy spectra in collisionless relativistic magnetic reconnection in pair plasmas*”, 2016, [ApJ, 816, L8](#)
30. **K. Nalewajko**, D. A. Uzdensky, B. Cerutti, G. W. Werner & M. C. Begelman „*On the distribution of particle acceleration sites in plasmoid-dominated relativistic magnetic reconnection*”, 2015, [ApJ, 815, 101](#)
31. A. Furniss, K. Noda, S. Boggs, J. Chiang, F. Christensen, et al. „*First NuSTAR Observations of Mrk 501 within a Radio to TeV Multi-Instrument Campaign*”, 2015, [ApJ, 812, 65](#)
32. K. K. Madsen, F. Fürst, D. J. Walton, F. A. Harrison, **K. Nalewajko**, et al. „*3C 273 with NuSTAR: Unveiling the Active Galactic Nucleus*”, 2015, [ApJ, 812, 14](#)

33. M. Hayashida, **K. Nalewajko**, G. M. Madejski, et al. „*Rapid Variability of Blazar 3C 279 during Flaring States in 2013-2014 with Joint Fermi-LAT, NuSTAR, Swift, and Ground-Based Multi-wavelength Observations*”, 2015, [ApJ, 807, 79](#)
34. S. Kohler & **K. Nalewajko** „*Turbulent spectra of the brightest gamma-ray flares of blazars*”, 2015, [MNRAS, 449, 2901](#)
35. **K. Nalewajko**, M. Sikora & M. C. Begelman „*Reconciling models of luminous blazars with magnetic fluxes determined by radio core shift measurements*”, 2014, [ApJ, 796, L5](#)
36. **K. Nalewajko**, M. C. Begelman & M. Sikora „*Constraining the Location of Gamma-Ray Flares in Luminous Blazars*”, 2014, [ApJ, 789, 161](#)
37. M. A. Sobolewska, A. Siemiginowska, B. C. Kelly & **K. Nalewajko** „*Stochastic Modeling of the Fermi/LAT Gamma-ray Blazar Variability*”, 2014, [ApJ, 786, 143](#)
38. M. Sikora, M. Janiak, **K. Nalewajko**, G. M. Madejski & R. Moderski „*On the origin of X-ray spectra in luminous blazars*”, 2013, [ApJ, 779, 68](#)
39. R. Chatterjee, **K. Nalewajko** & A. D. Myers „*Implications of the Anomalous Outburst in the Blazar PKS 0208-512*”, 2013, [ApJ, 771, L25](#)
40. **K. Nalewajko** „*The brightest gamma-ray flares of blazars*”, 2013, [MNRAS, 430, 1324](#)
41. C. W. Danforth, **K. Nalewajko**, K. France & B. A. Keeney „*A Fast Flare and Direct Redshift Constraint in Far-UV Spectra of the Blazar S5 0716+714*”, 2013, [ApJ, 764, 57](#)
42. **K. Nalewajko** & M. C. Begelman „*The effect of poloidal velocity shear on the local development of current-driven instabilities*”, 2012, [MNRAS, 427, 2480](#)
43. M. Janiak, M. Sikora, **K. Nalewajko**, R. Moderski & G. M. Madejski „*On the origin of the gamma-ray/optical lags in luminous blazars*”, 2012, [ApJ, 760, 129](#)
44. **K. Nalewajko**, M. Sikora, G. M. Madejski, K. Exter, A. Szostek, R. Szczerba, M. R. Kidger & R. Lorente „*Herschel PACS and SPIRE observations of blazar PKS 1510-089: a case for two blazar zones*”, 2012, [ApJ, 760, 69](#)
45. **K. Nalewajko**, M. C. Begelman, B. Cerutti, D. A. Uzdensky & M. Sikora „*Energetic Constraints on a Rapid Gamma-Ray Flare in PKS 1222+216*”, 2012, [MNRAS, 425, 2519](#)
46. The Fermi-LAT Collaboration „*The structure and emission model of the relativistic jet in the quasar 3C 279 inferred from radio to high-energy gamma-ray observations in 2008-2010*”, 2012, [ApJ, 754, 114](#)
47. **K. Nalewajko** & M. Sikora „*Polarization of synchrotron emission from relativistic reconnection shocks with ordered magnetic fields*”, 2012, [A&A, 543, 115](#)
48. The Fermi-LAT Collaboration „*Multi-wavelength Observations of Blazar AO 0235+164 in the 2008-2009 Flaring State*”, 2012, [ApJ, 751, 159](#)
49. **K. Nalewajko** „*Dissipation Efficiency of Reconnection Shocks in Relativistic Jets*”, 2012, [MNRAS, 420, L48](#)
50. **K. Nalewajko**, D. Giannios, M. C. Begelman, D. A. Uzdensky & M. Sikora „*Radiative Properties of Reconnection-Powered Minijets in Blazars*”, 2011, [MNRAS, 413, 333](#)
51. The Fermi-LAT Collaboration „*Fermi Gamma-ray Space Telescope Observations of Gamma-ray Outbursts from 3C 454.3 in 2009 December and 2010 April*”, 2010, [ApJ, 721, 1383](#)

52. The Fermi-LAT Collaboration and members of the 3C 279 multi-band campaign „*A change in the optical polarization associated with a gamma-ray flare in the blazar 3C 279*”, 2010, [Nature, 463, 919](#)
53. M. Sikora, Ł. Stawarz, R. Moderski, **K. Nalewajko** & G. Madejski „*Constraining Emission Models of Luminous Blazar Sources*”, 2009, [ApJ, 704, 38](#)
54. **K. Nalewajko** „*Polarization of synchrotron emission from relativistic reconfinement shocks*”, 2009, [MNRAS, 395, 524](#)
55. **K. Nalewajko** & M. Sikora „*A structure and energy dissipation efficiency of relativistic reconfinement shocks*”, 2009, [MNRAS, 392, 1205](#)
56. G. Pietrzyński, W. Gieren, O. Szewczyk, A. Walker, L. Rizzi, F. Bresolin, R.-P. Kudritzki, **K. Nalewajko**, J. Storm, M. Dall'Ora & V. Ivanov „*The Araucaria Project: the Distance to the Sculptor Dwarf Spheroidal Galaxy from Infrared Photometry of RR Lyrae Stars*”, 2008, [AJ, 135, 1993](#)
57. W. Gieren, G. Pietrzyński, **K. Nalewajko**, I. Soszyński, F. Bresolin, R.-P. Kudritzki, D. Minniti & A. Romanowsky „*The Araucaria Project: An Accurate Distance to the Local Group Galaxy NGC 6822 from Near-Infrared Photometry of Cepheid Variables*”, 2006, [ApJ, 647, 1056](#)

#### Conference proceedings

58. **K. Nalewajko** „*Rotation of the crescent image of M87\* and polarization of its ESE hotspot*”, in Proceedings of the Sixteenth Marcel Grossmann Meeting, 2023, [arXiv:2111.07735](#)
59. J. Ortuño-Macías & **K. Nalewajko** „*Kinetic Simulations of Instabilities in Cylindrical Magnetized Jets*”, in Proceedings of the XL Meeting of the Polish Astronomical Society, 2022, [PAS, 12, 241](#)
60. **K. Nalewajko** „*Magnetic Reconnection in Relativistic Jets*”, in Proceedings of the 28th Cracow Epiphany Conference on Recent Advances in Astroparticle Physics, 2022, [Acta Phys. Pol. B Proc. Suppl. 15, 3-A18](#)
61. **K. Nalewajko** & A. Róžańska „*Orientation of the crescent image of M87\**”, in Proceedings of the XXIX Meeting of the Polish Astronomical Society, 2020, [PAS, 10, 282](#)
62. J. Ortuño-Macías & **K. Nalewajko** „*Kinetic Simulations of Relativistic Radiative Magnetic Reconnection*”, in Proceedings of the XXIX Meeting of the Polish Astronomical Society, 2020, [PAS, 10, 255](#)
63. Q. Chen, X. Liu & **K. Nalewajko** „*Magnetized GRB Afterglows with Proper Deceleration Radius*”, in Proceedings of the XXIX Meeting of the Polish Astronomical Society, 2020, [PAS, 10, 201](#)
64. J. Ortuño-Macías & **K. Nalewajko** „*Kinetic Simulations Of Relativistic Radiative Steady-State Magnetic Reconnection*”, in Proceedings of the „High Energy Phenomena in Relativistic Outflows VII”, 2019, [PoS, 354, 72](#)
65. **K. Nalewajko** „*Relativistic magnetic reconnection in application to gamma-ray astrophysics*”, in Proceedings of the XXXVIII Meeting of the Polish Astronomical Society, 2018, [PAS, 7, 310](#)

66. **K. Nalewajko** „*A Model of Polarisation Rotations in Blazars from Kink Instabilities in Relativistic Jets*”, in proceedings of the „Polarised Emission from Astrophysical Jets”, 2017, [Galaxies, 5, 64](#)
67. **K. Nalewajko** „*Applying Relativistic Reconnection to Blazar Jets*”, in proceedings of the „Blazars through Sharp Multi-wavelength Eyes”, 2016, [Galaxies, 4, 26](#)
68. R. Blandford, W. East, **K. Nalewajko**, Y. Yuan & J. Zrake „*Active Galactic Nuclei: The TeV Challenge*”, in proceedings of the „HAWC inauguration conference”, 2015, [arXiv:1511.07515](#)
69. M. Sobolewska, A. Siemiginowska, B. Kelly & **K. Nalewajko** „*Stochastic approach to modeling the  $\gamma$ -ray variability of Fermi/LAT blazars*”, in proceedings of the „Extragalactic jets from every angle”, 2015, [IAUS, 313, 21](#)
70. S. Raino, G. M. Madejski, E. De Couto e Silva, F. Gargano, L. Reyes, **K. Nalewajko** & M. Sikora „*Study of the blazar AO 0235+164 during the multi-wavelength observation period from October 2008 to February 2009*”, 2013, [NuPhS, 239, 270](#)
71. P. Ferrando et al. „*The COSPIX mission: focusing on the energetic and obscured Universe*”, in proceedings of the „25th Texas Symposium on Relativistic Astrophysics”, 2010, [PoS\(Texas 2010\)254](#)
72. **K. Nalewajko** „*Polarization Swings from Curved Trajectories of the Emitting Region*”, in proceedings of the „High Energy Phenomena in Relativistic Outflows II”, 2010, [IJMPD, 19, 701](#)
73. **K. Nalewajko** & M. Sikora „*Polarization of Synchrotron Emission from Relativistic Reconfinement Shocks*”, in proceedings of the „Accretion and Ejection in AGN: a Global View”, 2010, [ASPC, 427, 205](#)
74. **K. Nalewajko** & M. Sikora „*Reconfinement shocks in relativistic AGN jets*”, in proceedings of the „4th Heidelberg International Symposium on High Energy Gamma-Ray Astronomy”, 2009, [AIPC, 1085, 483](#)

**Ph.D. thesis**

„*Reconfinement Shocks in Jets of Active Galaxies*”, Nicolaus Copernicus Astronomical Center, Warsaw, Poland, 30 June 2011