

NEKTARIOS VLAHAKIS

Work Address

Section of Astrophysics, Astronomy & Mechanics
Department of Physics
National and Kapodistrian University of Athens
University Campus, GR-157 84 Zografos, Athens, Greece

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Education

UNIVERSITY OF CRETE

Heraklion, Greece

1994-1998

Ph.D. in Astrophysics. Dissertation title:
“*Analytical modeling of Cosmic Winds and Jets*”
Supervisor: Professor Kanaris Tsinganos

1992-1994

Master of Science in Physics.

ARISTOTLE UNIVERSITY OF THESSALONIKI

Thessaloniki, Greece

1988-1992

Diploma (Grade: *Excellent*) in Physics.

Research Interests

Plasma Astrophysics – Relativistic/non-Relativistic Magnetohydrodynamics – Cosmic Jets
– Solar and Stellar Winds – Accretion Disks – AGN (quasars, blazars) – Gamma-Ray
Bursts – Pulsar Winds – Plasma Equilibrium and Stability – Polarization of Synchrotron
Radiation – Nonlinear Differential Equations

Employment

SECTION OF ASTROPHYSICS, ASTRONOMY & MECHANICS, DEPARTMENT OF PHYSICS,
SCHOOL OF SCIENCES, UNIVERSITY OF ATHENS

Athens, Greece

2020-present

Professor.

SECTION OF ASTROPHYSICS, ASTRONOMY & MECHANICS, DEPARTMENT OF PHYSICS,
SCHOOL OF SCIENCES, UNIVERSITY OF ATHENS

Athens, Greece

2016-2020

Associate Professor.

SECTION OF ASTROPHYSICS, ASTRONOMY & MECHANICS, DEPARTMENT OF PHYSICS,
SCHOOL OF SCIENCES, UNIVERSITY OF ATHENS

Athens, Greece

2008-2016

Assistant Professor.

SECTION OF ASTROPHYSICS, ASTRONOMY & MECHANICS, DEPARTMENT OF PHYSICS,
SCHOOL OF SCIENCES, UNIVERSITY OF ATHENS

Athens, Greece

2003-2008

Lecturer.

DEPARTMENT OF ASTRONOMY & ASTROPHYSICS AND ENRICO FERMI INSTITUTE,
UNIVERSITY OF CHICAGO

Chicago, IL, USA

2002-2003

Research Associate – Theoretical Astrophysics.

ENRICO FERMI INSTITUTE AND DEPARTMENT OF ASTRONOMY & ASTROPHYSICS,
UNIVERSITY OF CHICAGO Chicago, IL, USA
2000-2002

Robert F. McCormick Fellow.

Military Service Greece
1999-2000

UNIVERSITY OF CRETE Heraklion, Greece
1992-1998
Teaching Assistant.

FOUNDATION OF RESEARCH AND TECHNOLOGY Heraklion, Greece
1992-1998
IESL Research Fellow.

ARISTOTLE UNIVERSITY OF THESSALONIKI Thessaloniki, Greece
1992
Teaching Assistant.

Honors

2000-2002 Chicago, USA
McCormick Fellowship at the Enrico Fermi Institute, University of Chicago.

1992 Thessaloniki, Greece
Highest diploma grade at the Aristotle University.

1992 Heraklion, Greece
3rd Prize, Summer School on Physics at the University of Crete with the participation of students from all Physics departments of Greece.

1988-1992 Thessaloniki, Greece
Fellowship in the Physics Department at the Aristotle University (11th out of 220).

Teaching

UNIVERSITY OF ATHENS Athens, Greece
2003-present
Basic topics in astrophysics (graduate course), Current topics in astrophysics (graduate course), Plasma physics (graduate course), Plasma Astrophysics, High energy astrophysics, Fluid Dynamics, Astrophysical Fluids, Mechanics I, Mechanics II, Electromagnetism I, Electromagnetism II, Laboratory courses (astrophysics, physics IV).

UNIVERSITY OF CRETE Heraklion, Greece
1992-1998
Teaching assistant on Electromagnetism I, Electromagnetism II, Astrophysics II, Physics I, Physics II, Laboratory courses (mechanics).

UNIVERSITY OF THESSALONIKI Thessaloniki, Greece
1992
Teaching assistant on Astrophysics I.

Textbooks

Classical Mechanics (in Greek) ISBN: 978-618-228-103-1
Vlahakis, N. 2024, Kallipos, Open Academic Editions.

Fluid Dynamics (in Greek) ISBN: 978-960-02-3526-5
Vlahakis, N. 2019, Publisher Papazisis.

Personal

Born: February 04, 1971 (Agios Nikolaos, Greece).
 Citizenship: Greek.
 Marital status: Married, one child.
 Hobbies: Chess.
 Languages: Greek (native), English.

PUBLICATIONS

Refereed

1. *On the topological stability of astrophysical jets*,
Vlahakis, N. & Tsinganos, K. 1997, MNRAS, 292, 591
2. *Systematic Construction of Exact MHD models for Astrophysical Winds and Jets*,
Vlahakis, N. & Tsinganos, K. 1998, MNRAS, 298, 777
3. *A class of exact MHD models for astrophysical jets*,
Vlahakis, N. & Tsinganos, K. 1999, MNRAS, 307, 279
4. *Steady MHD Solutions for Collimated Winds*,
Trussoni, E., Sauty, C., Tsinganos, K., & Vlahakis, N. 1999, Ap&SS, 264, 183
5. *A disk-wind model with correct crossing of all MHD critical surfaces*,
Vlahakis, N., Tsinganos, K., Sauty, C., & Trussoni, E. 2000, MNRAS, 318, 417
6. *Magnetohydrodynamics of Gamma-Ray Burst Outflows*,
Vlahakis, N. & Königl, A. 2001, ApJL, 563, L129
7. *Systematic construction of exact 2-D MHD equilibria
with steady, compressible flow in Cartesian geometry and uniform gravity*,
Petrie, G. J. D., Vlahakis, N., & Tsinganos, K. 2002, A&A, 382, 1081
8. *Neutron-Rich Hydromagnetic Outflows in Gamma-Ray Burst Sources*,
Vlahakis, N., Peng, F., & Königl, A. 2003, ApJL, 594, L23
9. *Hydromagnetic Acceleration in Relativistic Outflows*,
Vlahakis, N. 2003, NewAR, 47, 701
10. *Relativistic Magnetohydrodynamics with Application to Gamma-Ray Burst Outflows.
I. Theory and Semianalytic Trans-Alfvénic Solutions*,
Vlahakis, N. & Königl, A. 2003, ApJ, 596, 1080
11. *Relativistic Magnetohydrodynamics with Application to Gamma-Ray Burst Outflows.
II. Semianalytic Super-Alfvénic Solutions*,
Vlahakis, N. & Königl, A. 2003, ApJ, 596, 1104
12. *A model for GRB jets*,
Vlahakis, N. & Königl, A. 2003, Ap&SS, 287, 249
13. *Collimation of Astrophysical MHD Outflows*,
Tsinganos, K., Vlahakis, N., Bogovalov, S., Sauty, C., Trussoni, E., & Lima, J. J. G.
2003, Ap&SS, 287, 103
14. *Ideal MHD Solution to the σ problem in Crab-like Pulsar Winds
and General Asymptotic Analysis of Magnetized Outflows*,
Vlahakis, N. 2004, ApJ, 600, 324
15. *Magnetic Driving of Relativistic Outflows in Active Galactic Nuclei.
I. Interpretation of Parsec-Scale Accelerations*,
Vlahakis, N. & Königl, A. 2004, ApJ, 605, 656

16. *Relativistic Parker winds with variable effective polytropic index*,
Meliani, Z., Sauty, C., Tsinganos, K., & Vlahakis, N. 2004, A&A, 425, 773
17. *The efficiency of the magnetic acceleration in relativistic jets*,
Vlahakis, N. 2004, Ap&SS, 293, 67
18. *Steady and Time-Dependent MHD Modelling of Jets*,
Tsinganos, K., Vlahakis, N., Bogovalov, S. V., Sauty, C., & Trussoni, E. 2004, Ap&SS, 293, 55
19. *Magnetic fireball: The acceleration efficiency of hydromagnetic outflows in GRB sources*,
Vlahakis, N. 2005, Nuovo Cimento C, 28, 393
20. *Nonradial and nonpolytropic astrophysical outflows. VIII. A GRMHD generalization for relativistic jets*,
Meliani, Z., Sauty, C., Vlahakis, N., Tsinganos, K., & Trussoni, E. 2006, A&A, 447, 797
21. *Jet simulations extending radially self-similar magnetohydrodynamics models*,
Gracia, J., Vlahakis, N., & Tsinganos, K. 2006, MNRAS, 367, 201
22. *Magnetized Outflows*,
Vlahakis, N. 2006, Nuovo Cimento B, 121, 1145
23. *Radiation from internal shocks in magnetized supercritical flows*,
Magkanari, M., Sapountzis, K., Mastichiadis, A., & Vlahakis, N. 2006, Nuovo Cimento B, 121, 1507
24. *Magnetic acceleration of relativistic active galactic nucleus jets*,
Komissarov, S. S., Barkov, M. V., Vlahakis, N., & Königl, A. 2007, MNRAS, 380, 51
25. *Two-component jet simulations. I. Topological stability of analytical MHD outflow solutions*,
Matsakos, T., Tsinganos, K., Vlahakis, N., Massaglia, S., Mignone, A., & Trussoni, E. 2008, A&A, 477, 521
26. *Resistive jet simulations extending radially self-similar magnetohydrodynamic models*,
Čemeljić, M., Gracia, J., Vlahakis, N., & Tsinganos, K. 2008, MNRAS, 389, 1022
27. *Stability and structure of analytical MHD jet formation models with a finite outer disk radius*,
Stute, M., Tsinganos, K., Vlahakis, N., Matsakos, T., & Gracia, J. 2008, A&A, 491, 339
28. *Magnetohydrodynamic modeling of relativistic outflows*,
Vlahakis, N. 2008, International Journal of Modern Physics D, 17, 1661
29. *Synthetic synchrotron emission maps from MHD models for the jet of M87*,
Gracia, J., Vlahakis, N., Agudo, I., Tsinganos, K., & Bogovalov, S. V. 2009, ApJ, 695, 503
30. *Magnetic acceleration of ultra-relativistic jets in gamma-ray burst sources*,
Komissarov, S. S., Vlahakis, N., Königl, A., & Barkov, M. V. 2009, MNRAS, 394, 1182
31. *Two-component jet simulations. II. Combining analytical disk and stellar MHD outflow solutions*,
Matsakos, T., Massaglia, S., Trussoni, E., Tsinganos, K., Vlahakis, N., Sauty, C., & Mignone, A. 2009, A&A, 502, 217
32. *Comparison of synthetic maps from truncated jet-formation models with YSO jet observations*,
Stute, M., Gracia, J., Tsinganos, K., & Vlahakis, N. 2010, A&A, 516, A6
33. *Rarefaction acceleration of ultrarelativistic magnetized jets in gamma-ray burst sources*,
Komissarov, S. S., Vlahakis, N., & Königl, A. 2010, MNRAS, 407, 17

34. *Relativistic expansion of a magnetized fluid*,
Gourgouliatos, K. N., Vlahakis, N. 2010, *Geophysical & Astrophysical Fluid Dynamics*, 104, 431
35. *Design concepts for the Cherenkov Telescope Array CTA: an advanced facility for ground-based high-energy gamma-ray astronomy*,
Actis, M. et al. 2011, *Experimental Astronomy*, 32, 193
36. *Velocity asymmetries in YSO jets. Intrinsic and extrinsic mechanisms*,
Matsakos, T., Vlahakis, N., Tsinganos, K., Karampelas, K., Sauty, C., Cayatte, V., Matt, S. P., Massaglia, S., Trussoni, E., & Mignone, A. 2012, *A&A*, 545, A53
37. *Introducing the CTA concept*,
Acharya, B. S. et al. 2013, *Astroparticle Physics*, 43, 3
38. *Rarefaction acceleration in magnetized gamma-ray burst jets*,
Sapountzis, K., & Vlahakis, N. 2013, *MNRAS*, 434, 1779
39. *Two-component YSO jet models: from theory to synthetic observations*,
Teşileanu, O., Matsakos, T., Massaglia, S., Mignone, A., Trussoni, E., Vlahakis, N., Tsinganos, K., Sauty, C., Cayatte, V., Stehlé, C., & Chièze, J.-P. 2014, *A&A*, 562, A117
40. *3D simulations of disc winds extending radially self-similar MHD models*,
Stute, M., Gracia, J., Vlahakis, N., Tsinganos, K., Mignone, A., & Massaglia, S. 2014, *MNRAS*, 439, 3641
41. *Counter-rotation in relativistic magnetohydrodynamic jets*,
Cayatte, V., Vlahakis, N., Matsakos, T., Lima, J. J. G., Tsinganos, K., & Sauty, C. 2014, *ApJ*, 788, L19
42. *Large resistivity in numerical simulations of radially self-similar outflows*,
Čemeljić, M., Vlahakis, N., & Tsinganos, K. 2014, *MNRAS*, 442, 1133
43. *Rarefaction wave in relativistic steady magnetohydrodynamic flows*,
Sapountzis, K., & Vlahakis, N. 2014, *Physics of Plasmas*, 21, 072124
44. *A radio jet drives a molecular \mathcal{E} atomic gas outflow in multiple regions within one square kiloparsec of the nucleus of the nearby galaxy IC5063*,
Dasyra, K. M., Bostrom, A. C., Combes, F., & Vlahakis, N. 2015, *ApJ*, 815, 34
45. *ALMA reveals optically thin, highly excited CO gas in the jet-driven winds of the galaxy IC5063*,
Dasyra, K. M., Combes, F., Oosterloo, T., Oonk, J. B. R., Morganti, R., Salome, P., & Vlahakis, N. 2016, *A&A*, 595, L7
46. *Properties of the molecular gas in the fast outflow in the Seyfert galaxy IC 5063*,
Oosterloo, T., Raymond Oonk, J. B., Morganti, R., Combes, F., Dasyra, K., Salomé, P., Vlahakis, N., & Tadhunter, C. 2017, *A&A*, 608, A38
47. *Nonradial and nonpolytropic astrophysical outflows. X. Relativistic MHD rotating spine jets in Kerr metric*,
Chantry, L., Cayatte, V., Sauty, C., Vlahakis, N., & Tsinganos, K. 2018, *A&A*, 612, A63
48. *Phase-modulated X-ray Emission from Cepheids due to Pulsation-Driven Shocks*,
Moschou, S.-P., Vlahakis, N., Drake, J. J., Evans, N. R., Neilson, H. R., Guzik, J. A., & ZuHone, J. 2020, *ApJ*, 900, 157
49. *A numerical study on laboratory plasma dynamics validated by low current x-pinch experiments*,
Koundourakis, G., Skoulakis, A., Kaselouris, E., Ftilis, I., Clark, E. L., Chatzakis, J., Bakarezos, M., Vlahakis, N., Papadogiannis, N. A., Dimitriou, V., & Tatarakis, M. 2020, *Plasma Phys. & Control. Fusion*, 62, 125012

50. *High performance simulations of a single X-pinch*,
Skoulakis, A., Koundourakis, G., Ciardi, A., Kaselouris, E., Ftilis, I., Chatzakis, J.,
Bakarezos, M., Vlahakis, N., Papadogiannis, N. A., Tatarakis, M., & Dimitriou, V.
2022, *Plasma Phys. & Control. Fusion*, 64, 025003
51. *Double flows anchored in a Kerr black hole horizon - I. Meridionally self-similar MHD
models with loading terms*,
Chantry, L., Cayatte, V. ; Sauty, C., Vlahakis, N., & Tsinganos, K. 2022, *MNRAS*,
515, 3796
52. *On the stability of relativistic two-component AGN jets*,
Sinnis, C., Millas, D. & Vlahakis, N. 2023, *MNRAS*, 523, 6294
53. *Linear Stability Analysis of Relativistic Magnetized Jets: Methodology*,
Vlahakis, N. 2023, *Universe*, 9,386
54. *Physics-informed neural networks for modeling astrophysical shocks*,
Moschou, S. P., Hicks, E., Parekh, R. Y., Mathew, D., Majumdar, S., & Vlahakis, N.
2023, *Mach. Learn.: Sci. Technol.*, 4, 035032
55. *Linear stability analysis of relativistic magnetized jets: The Kelvin-Helmholtz mode*,
Sinnis, C. & Vlahakis, N. 2023, *A&A*, 680, A46
56. *Relativistic shocks in conductive media*,
Loules, A. & Vlahakis, N. 2024, *A&A*, 681, A89
57. *Linear Stability Analysis of Relativistic Magnetized Jets: The Minimalist Approach*,
Vlahakis, N. 2024, *Universe*, 10,183
58. *The Schwarzian Approach in Sturm-Liouville Problems*,
Vlahakis, N. 2024, *Symmetry*, 16, 648
59. *The role of heating in the formation and the dynamics of YSO jets. I. A parametric
study*,
Meskini, C., Sauty, C., Marcowith, A., Vlahakis, N., Brunn, V. 2024, *A&A*, 686, A287
60. *A model for general relativistic magnetohydrodynamic spine jets*,
Anastasiadis, Y. & Vlahakis, N. 2024, *A&A*, 688, A11

***Invited Chapters
in Special Volumes***

1. *On the Oscillatory Collimation of Astrophysical Jets*,
Tsinganos, K. & Vlahakis, N. 1998, in *Astrophysical Jets: Open Problems*, S. Mas-
saglia and G. Bodo (eds.), Gordon and Breach Science Publishers, pp 43 - 51.
2. *MHD Modelling of Astrophysical Jets*,
Tsinganos, K., Trussoni, E., Sauty, C., & Vlahakis, N. 2001, in *AGN in their Cosmic
Environment*, B. Rocca-Volmerange and H. Sol (eds.), EAS Publication Series Vol. 1,
pp 63 - 74.
3. *Output from MHD Models*,
Vlahakis, N. 2010, in *Jets from Young Stars IV: From Models to Observations and
Experiments*, P. J. V. Garcia and J. M. Ferreira (eds.), *Lect. Notes Phys.*, 793, 51
4. *Theory of relativistic jets*,
Vlahakis, N. 2015, in *The Formation and Disruption of Black Hole Jets*, I. Contopou-
los, D. Gabuzda and N. Kylafis (eds.), *Astrophysics and Space Science Library*, 414,
177
5. *Studies of Relativistic Jets in Active Galactic Nuclei with SKA*, Agudo, I., Böttcher,
M., Falcke, H., Georganopoulos, M., Ghisellini, G., Giovannini, G., Giroletti, M.,
Gómez, J. L., Gurvits, L., Laing, R., Lister, M., Martí, J.-M., Meyer, E. T., Mizuno,

Y., O'Sullivan, S., Padovani, P., Paragi, Z., Perucho, M., Schleicher, D., Stawarz, L., Vlahakis, N., & Wardle, J. 2015, in *Advancing Astrophysics with the Square Kilometre Array (AASKA14)*, SKA Science Team (eds.), Proceedings of Science, id 93

**Conference
Proceedings**

1. *MHD disk-Wind Solutions Crossing all Singularities*,
Trussoni, E., Vlahakis, N., Tsinganos, K., & Sauty, C. 2001 in *Particles and Fields in Radio Galaxies*, R. A. Laing and K. M. Blundell (eds.), ASP Conference Proceedings 250, 32.
2. *Systematic Construction of Exact Magnetohydrodynamic Models for Solar Coronal Structures and an Application to Modelling a Coronal Loop*,
Petrie, G. J. D., Vlahakis, N., & Tsinganos, K. 2001, in *5th Hellenic Astronomical Conference*, published online <http://www.astro.auth.gr/elaset/helasmgt/2001/proceedings.htm>
3. *The Dynamics of Magnetized Outflows in GRBs*,
Vlahakis, N. & Königl, A. 2003, in *Gamma-Ray Burst and Afterglow Astronomy 2001*, G. R. Ricker and R. K. Vanderspek (eds.), AIP Conference Proceedings 662, 166.
4. *Analytical Modeling of Hydromagnetic Jets in AGNs*,
Vlahakis, N. & Königl, A. 2003, in *Active Galactic Nuclei: from Central Engine to Host Galaxy*, S. Collin, F. Combes, and I. Shlosman (eds.), ASP Conference Series 290, 219.
5. *The Dynamics of Magnetized Gamma-Ray Burst Outflows* ,
Vlahakis, N. 2004, in *Proceedings of the 6th Hellenic Astronomical Society Conference*, P. G. Laskarides (ed.), Editing Office of the University of Athens, 167.
6. *Study of Nonrelativistic and Relativistic MHD Jets* ,
Lazaridis, M., Sauty, C., Vlahakis, N., Tsinganos, K. 2004, in *Proceedings of the 6th Hellenic Astronomical Society Conference*, P. G. Laskarides (ed.), Editing Office of the University of Athens, 175.
7. *Relativistic Outflows in AGNs*,
Vlahakis, N. & Königl, A. 2004, in *AGN Physics with the Sloan Digital Sky Survey*, G. T. Richards and P. B. Hall (eds.), ASP Conference Series 311, 151.
8. *Hydromagnetic Acceleration of GRB Outflows*,
Vlahakis, N. & Königl, A. 2004, in *Third Rome Workshop on Gamma-Ray Bursts in the Afterglow Era*, M. Feroci, F. Frontera, N. Masetti, and L. Piro (eds.), ASP Conference Series 312, 464.
9. *Large-scale magnetic fields in GRB outflows: Acceleration, Collimation, and Neutron Decoupling*,
Vlahakis, N. & Königl, A. 2004, in *Gamma-Ray Bursts: 30 years of discovery*, E. E. Fenimore and M. Galassi (eds.), AIP Conference Proceedings 727, 282
10. *Disk-Jet Connection*,
Vlahakis, N. 2006, in *Blazar Variability Workshop II: Entering the GLAST Era*, H. R. Miller, K. Marshall, J. R. Webb, and M. F. Aller (eds.), ASP Conference Series 350, 169.
11. *Magnetic Driving of AGN Jets*,
Vlahakis, N. 2006, in *7th International Conference of the Hellenic Astronomical Society*, N. H. Solomos (ed.), AIP Conference Proceedings 848, 540
12. *A GRMHD model for cosmical jets*,
Tsinganos, K., Meliani, Z., Sauty, C., Vlahakis, N., & Trussoni, E. 2006, in *7th International Conference of the Hellenic Astronomical Society*, N. H. Solomos (ed.), AIP Conference Proceedings 848, 560
13. *Relativistic Jet Modeling: Application to AGN*,
Sauty, C., Meliani, Z., Trussoni, E., Tsinganos, K., & Vlahakis, N. 2006, in *Albert*

- Einstein Century International Conference*, J.-M. Alimi and A. Füzfa (eds.), AIP Conference Proceedings 861, 736
14. *Solar Wind and Stellar Jets, from Newtonian to Relativistic Ones*, Sauty, C., Lima, J. J. G., Tsinganos, K., Aibeo, A., Meliani, Z., & Vlahakis, N. 2007, in *Fifty Years of Romanian Astrophysics*, AIP Conference Proceedings 895, 87
 15. *Modeling Jets from YSOs as Two-Component Collimated Outflows*, Tsinganos, K., Matsakos, T., Vlahakis, N., Massaglia, S., Mignone, A., & Trussoni, E. 2007, in *JENAM-2007, Our Non-Stable Universe*, 25
 16. *Two-Component Jet Simulations: Topological Stability of the Self-Similar Solutions*, Matsakos, T., Tsinganos, K., Vlahakis, N., Massaglia, S., Mignone, A., & Trussoni, E. 2007, in *JENAM-2007, Our Non-Stable Universe*, 27
 17. *Relativistic jets and nuclear regions in AGN*, Vlahakis, N. 2008, *Memorie della Societa Astronomica Italiana*, 79, 1148
 18. *Radiation from Internal Shocks in Magnetized Flows*, Sapountzis, K., Magkanari, M., Mastichiadis, A., & Vlahakis, N. 2008, in *International Cosmic Ray Conference*, 3, 1179
 19. *Extending Analytical MHD Jet Formation Models with a Finite Disk Radius*, Stute, M., Tsinganos, K., Vlahakis, N., Matsakos, T., & Gracia, J. 2009, in *Protostellar Jets in Context*, K. Tsinganos, T. Ray, and M. Stute (eds.), *Astrophysics and Space Science Proceedings Series*, 123
 20. *Resistive MHD Jet Simulations with Large Resistivity*, Čemeljić, M., Gracia, J., Vlahakis, N., & Tsinganos, K. 2009, in *Protostellar Jets in Context*, K. Tsinganos, T. Ray, and M. Stute (eds.), *Astrophysics and Space Science Proceedings Series*, 137
 21. *On the Effect of Stellar Wind Braking onto the Central Object*, Sauty, C., Globus, N., Meliani, Z., Tsinganos, K., Vlahakis, N. & Trussoni, E. 2009, in *Protostellar Jets in Context*, K. Tsinganos, T. Ray, and M. Stute (eds.), *Astrophysics and Space Science Proceedings Series*, 173
 22. *Jets in the MHD Context*, Vlahakis, N. 2009, in *Protostellar Jets in Context*, K. Tsinganos, T. Ray, and M. Stute (eds.), *Astrophysics and Space Science Proceedings Series*, 205
 23. *Two-component Jet Simulations: Combining Analytical and Numerical Approaches*, Matsakos, T., Massaglia, S., Trussoni, E., Tsinganos, K., Vlahakis, N., Sauty, C., & Mignone, A. 2009, in *Protostellar Jets in Context*, K. Tsinganos, T. Ray, and M. Stute (eds.), *Astrophysics and Space Science Proceedings Series*, 441
 24. *Velocity Asymmetries in the Bipolar Flows of YSO Jets*, Matsakos, T., Vlahakis, N., Tsinganos, K., Massaglia, S., Trussoni, E., Sauty, C., & Mignone, A. 2010, in *Proceedings of the 9th International Conference of the Hellenic Astronomical Society*, K. Tsinganos, D. Hatzidimitriou, and T. Matsakos (eds.), *ASP Conference Series* 424, 143
 25. *Steady-state rarefaction waves in relativistic magnetized flows: Theory and application to gamma-ray burst outflows*, Sapountzis, K., & Vlahakis, N. 2010, in *25th Texas Symposium on Relativistic Astrophysics*, F. M. Rieger, C. van Eldik, and W. Hofmann (eds.), *Proceedings of Science* <http://pos.sissa.it/cgi-bin/reader/conf.cgi?confid=123>, id.41
 26. *Large resistivity in numerical simulations of radially self-similar outflows*, Čemeljić, M., Vlahakis, N., & Tsinganos, K. 2011, in *Astrophysical Dynamics: From Stars to Galaxies*, N. H. Brummell, A. S. Brun, M. S. Miesch & Y. Ponty (eds.), *Proceedings IAU Symposium No. 271*, 371

27. *Steady-state rarefaction waves in magnetized flows and their application to gamma-ray burst outflows*,
Sapountzis, K., & Vlahakis, N. 2011, in *Proceedings of the 10th International Conference of the Hellenic Astronomical Society*, I. Papadakis, and A. Anastasiadis (eds.), published online <http://www.helas.gr/conf/2011/>
28. *Acceleration of Magnetized Collapsar Jets After Breakout*,
Sapountzis, K., & Vlahakis, N. 2013, in *Gamma-ray Bursts: 15 Years of GRB Afterglows – Progenitors, Environments and Host Galaxies from the Nearby to the Early Universe*, A. J. Castro-Tirado, J. Gorosabel, and I. H. Park (eds.), EAS Publications Series, 61, 181
29. *Are counterrotating jets possible?*,
Vlahakis, N., Tsinganos, K., Matsakos, T., Cayatte, V., Sauty, C., & Lima, J. 2013, in *Proceedings of the 11th International Conference of the Hellenic Astronomical Society*, I. Papadakis, and A. Anastasiadis (eds.), published online <http://www.helas.gr/conf/2013/>
30. *Solving the wind equation for relativistic magnetized jets*,
Karampelas, K., Millas, D., Katsoulakos, G., Lingri, D., & Vlahakis, N. 2013, in *Proceedings of the 11th International Conference of the Hellenic Astronomical Society*, I. Papadakis, and A. Anastasiadis (eds.), published online <http://www.helas.gr/conf/2013/>
31. *Solutions of the wind equation in relativistic magnetized jets*,
Millas, D., Katsoulakos, G., Lingri, D., Karampelas, K., & Vlahakis, N. 2014, International Journal of Modern Physics: Conference Series, 28, 1460200
32. *Stability analysis of magnetized astrophysical relativistic jets without current sheets*,
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