MATTHEW W. KUNZ

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Academic positions

2024–	Associate Chair, Department of Astrophysical Sciences, Princeton University
2024–	Director of Graduate Studies, Program in Plasma Physics, Princeton University
2021–	Associate Professor of Astrophysical Sciences, Princeton University
2015–21	Assistant Professor of Astrophysical Sciences, Princeton University
2014–15	Lyman Spitzer, Jr. Postdoctoral Research Associate, Princeton University
2011–14	NASA Einstein Postdoctoral Fellow; Fellowship Sponsor: J. Stone
2010–11	Junior Research Fellow, University of Oxford, Mansfield College
2009–11	Postdoctoral Research Associate, Rudolf Peierls Centre for Theoretical Physics, Oxford; Advisor: A. Schekochihin

Education

University of Illinois at Urbana-Champaign (UIUC) – MS Physics, 2005; PhD Physics, 2009
PhD Thesis: *The nonisothermal stage of magnetic star formation*; Advisor: T. Mouschovias

University of Virginia (UVa) – BA Astronomy-Physics with High Distinction (Minor Math), 2003
Thesis: *Ambipolar diffusion and the magnetorotational instability*; Advisor: S. Balbus

University of Virginia (UVa) – BA Music, 2003; Advisor: W. Ross

Honors and awards

2020–25	NSF Faculty Early Career Development Program (CAREER) Award
2017–20	Alfred P. Sloan Research Fellowship in Physics
2011–14	NASA Einstein Postdoctoral Fellowship
2003–09	UIUC Excellent Teachers List (10/10 eligible terms)
2005–08	UIUC Outstanding Teachers List (top 10% campus-wide; 4/10 eligible terms)
2003–04	Graduate Assistance in Areas of National Need (GAANN) Fellowship (held at UIUC)
2003	UVa Department of Music Brander Wyatt Morrison Prize
2002–03	UVa Lawn Resident (one of the top honors awarded by UVa)
2001–02	David A. Harrison III Undergraduate Research Fellowship (held at UVa)
2000–03	UVa Echols Honors Program
1999	Eagle Scout, Boy Scouts of America

Recent talks

Invited seminars and colloquia: Columbia Univ. (11/24); Centre de Recherche Astrophysique de Lyon (6/22); Institut de Planétologie et d'Astrophysics de Grenoble (6/22); Rudolf Peierls Centre for Theoretical Physics in Oxford (5/22); Nordita (5/22); Observatoire de la Côte d'Azur in Nice (4/22); Univ. Crete (5/21); UCLA/UCSD/UCI (3/21); J. Plasma Physics (3/21); UIUC (1/21) . . .

Invited talks: MIAPbP High-energy plasma phenomena in astrophysics, Garching (9/24); IPELS16 Interrelationship between plasma experiments in the laboratory and in space, Garching (8/24); NSF ECLIPSE meeting, Rochester (4/24); MHD flows in young circumstellar disks, Ringberg (10/23); Cosmic turbulence and magnetic fields, Cargèse (9/23); Astronum, Pasadena (6/23); SolarWind16, Pacific Grove (6/23); Working across scales in complex systems, Emory (4/23) . . .

Thesis students and postdoctoral researchers advised

M. Walker, Princeton astrophysics senior thesis, 2019–20 → *grad, JHU*
J. Ding, Princeton astro senior thesis, 2023–24 (with C. Hamilton, S. Tremaine) → *grad, Northwestern*

R. Xu, Princeton astrophysics masters project, 2015–16
L. Arzamasskiy, Princeton astrophysics masters project, 2016–17
A. Alt, Princeton plasma physics masters project, 2018–19
A. Galishnikova, Princeton astrophysics masters project, 2019–20
H. Winarto, Princeton plasma physics masters project, 2020–21
S. Majeski, Princeton plasma physics masters project, 2021–22
T. Foster, Princeton plasma physics masters project, 2022–23
R. Madan, Princeton plasma physics masters project, 2024–25
R. Hix, Princeton astrophysics, masters project, 2024–25

D. St-Onge, Princeton plasma physics PhD, 2016–19 → *postdoc, Oxford* → *Vola Dynamics LLC*
L. Arzamasskiy, Princeton astrophysics PhD, 2017–20 → *postdoc, IAS* → *Citadel LLC*
W. Xu, Princeton astrophysics PhD, 2019–22 → *postdoc, Flatiron*
E. Yerger, Princeton plasma physics PhD, 2019–23 → *postdoc, UNH*
C. Bambic, Princeton astrophysics PhD, 2021–24 (with E. Quataert) → *postdoc, Georgia Tech*
H. Winarto, Princeton plasma physics PhD, 2021–25
S. Majeski, Princeton plasma physics PhD, 2022–25 → *postdoc, JILA*
M. Zhang, Princeton plasma physics PhD, 2022–25 → *postdoc, Otago*
T. Foster, Princeton plasma physics PhD, 2023– (with F. Parra)
Z. Hemler, Princeton astrophysics PhD, 2024–

S. S. Cerri, Princeton postdoctoral research associate, 2017–21 → *CNRS Researcher, Nice*
V. Zhdankin, NASA Einstein Postdoctoral Fellow, 2018–21 → *Flatiron* → *Asst. Prof., UW–Madison*
A. Bott, Princeton postdoctoral research associate, 2019–22 → *UKRI FLF, Oxford*
M. Zhou, Princeton Presidential Postdoctoral Research Fellow, 2022–23 → *Asst. Prof., Dartmouth*
D. Hosking, Princeton Center for Theoretical Science Fellow, 2022–25 → *Gonville & Caius Fellow*
P. Kempski, Lyman Spitzer, Jr. Postdoctoral Fellow, 2022–25 → *Postdoc, THEA Columbia*

Teaching experience

Spring 2017–21, ’23–’25	Professor, AST554: Irreversible Processes in Plasmas, Princeton
Fall 2016, ’18, ’20, ’25	Professor, AST521: Intro. to Plasma Astrophysics, Princeton
Fall 2018, ’20, ’22	Professor, AST303: Deciphering the Universe, Princeton
Fall 2016	Professor, AST541: Seminar in Theoretical Astrophysics, Princeton
Fall 2010 – Spr 2011	College Tutor (Electricity & Magnetism), Mansfield College, Oxford
Fall 2010 – Spr 2011	College Tutor (Electricity & Magnetism), Merton College, Oxford
Fall 2007 – Spr 2009	Teaching Assistant (Graduate Electromagnetism), Dept. of Physics, UIUC
Fall 2006	Teaching Assistant (General Physics I, Lab), Dept. of Physics, UIUC
Spr 2006, ’07	Head Teaching Assistant (General Physics II), Dept. of Physics, UIUC
Fall 2005, ’08	Teaching Assistant (General Physics II), Dept. of Physics, UIUC
Fall 2004	Teaching Assistant (Graduate Astrophysics), Dept. of Physics, UIUC
Fall 2003, Spr 2005	Teaching Assistant (Mechanics), Dept. of Physics, UIUC

Lecturing experience

Jun 2025	Lecturer, SCEECS/NSF Summer School on Plasma Physics, UTSA
Jun 2019, '21, '23	Lecturer, NSF/GPAP Summer School on Plasma Physics for Astrophysicists
Jul 2018	Lecturer, Astrosoma Summer School, MIPT, Moscow
Jul 2016	Lecturer, PiTP: Computational Plasma Astrophysics, Inst. for Adv. Study
Jun 2016–2019, '22	Lecturer, SULI Summer School, Princeton Plasma Physics Laboratory
Spring 2013, '17, '19	Lecturer, Les Houches School on Plasma Astrophysics

Awarded grants

NSF Physics, *Collaborative Research: Decay and Diffusion of Dynamo-Generated Magnetic Fields in Astrophysical Plasmas* (PIs: MWK, M. Zhou; 2025–28)

NSF Physics, *Exploration of the Nonequilibrium Statistical Mechanics of Turbulent Collisionless Plasmas* (PI: V. Zhdankin, Co-I: MWK; 2024–27)

NASA Heliophysics Theory, Modeling and Simulations, *Tracing the Flow of Energy that Heats and Accelerates Solar-Wind Streams that Originate in Coronal Holes* (PI: B. Chandran, Co-I: MWK; 2023–26)

Chandra X-Ray Center subaward, *How do Cosmic Plasmas Work? Insights from the Hottest Brightest Cold Front and Gas Perturbations in A2319* (PI: I. Zhuravleva, Co-I: MWK; 2022–24)

NSF Faculty Early Career Development Program (CAREER) Award, *CAREER: Magnetogenesis and Plasma Dynamo Across Cosmic Time* (PI: MWK; 2020–25)

NSF/DOE Partnership in Basic Plasma Science and Engineering, *Collaborative Research: Multiscale Dynamics of Kinetic Turbulence in Weakly Collisional, High-Beta Plasmas* (PIs: MWK, E. Quataert; 2018–21)

Chandra X-Ray Center subaward, *Shock structure, the electron-ion equilibration timescale and the disintegrating cool core in A2146* (PI: H. Russell, Co-I: MWK; 2018–21)

NASA Astrophysics Theory Program, *Instability, Turbulence, and Enhanced Transport in Collisionless Black-Hole Accretion Flows* (PI: MWK; 2017–21)

DOE Laboratory Basic Plasma Science Program, *Turbulent Dynamo and Magnetic Self-Organization in Collisionless, Magnetized Plasmas* (PI: MWK; 2017–21)

Alfred P. Sloan Research Fellowship in Physics (PI: MWK; 2017–20)

NSF Astronomy Division, *Collaborative Research: Predicting the Observational Signatures of Accreting Black Holes* (PIs: C. Gammie, E. Quataert, J. Stone, MWK; 2017–20)

NASA Heliophysics Supporting Research, *Kinetic Turbulence, Ion Heating, and Plasma Microphysics in the Solar Wind and Numerical Simulations* (PI: MWK; 2016–20)

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Service (selected)

Vice-Chair (2019–20), Chair-Elect (2020–21), Chair (2021–22), and Past-Chair (2022–23) of the Topical Group in Plasma Astrophysics (GPAP) of the APS – Division of Plasma Physics

Ph.D. Thesis Examiner and/or Reader for 8 astrophysics PhDs and 12 plasma-physics PhDs

Organizer or co-organizer of: *Interconnections between the Physics of Plasmas and Self-Gravitating Systems* at KITP (2024); *Plasma Kinetics Working Group Meeting* at WPI, Vienna (2014–19, '22, '23, '25); *NSF/GPAP Summer School on Plasma Physics for Astrophysicists* at Swarthmore College (2019, '21, '23); *Stability, Energetics, and Turbulent Transport in Astrophysical, Fusion, and Solar Plasmas* at PCTS, Princeton (2013)

Member of organizing committees for: *SCEECS Summer School on Extreme Electrodynamics and Plasma Physics* at UTSA (2025); *NSF ECLIPSE* conference (2022); *Connecting Micro and Macro Scales: Acceleration, Reconnection, and Dissipation in Astrophysical Plasmas* conference at KITP (2019); *Snowcluster 2018: The Physics of Galaxy Clusters* conference (2018); *From Laboratories to Astrophysics: The Expanding University of Plasma Physics* winter school at Les Houches (2017); *HEDLA XI* conference at SLAC (2016)

Referee for: *J. Plasma Physics*, *Nature Comm.*, *Astrophys. J.*, *Phys. Rev. X*, *Proc. Nat. Acad. Sci.*, *Mon. Not. Roy. Astron. Soc.*, *Phys. Plasmas*, *J. Fluid Mech.*, *Astron. Astrophys.*...

Scientific journal publications

($*$ denotes a student collaborator under my direct supervision or co-supervision)

1. A. F. A. Bott, **M. W. Kunz**, E. Quataert, J. Squire, L. Arzamasskiy, *J. Plasma Phys.*, in press
   Thermodynamics and collisionality in firehose-susceptible high-β plasmas
2. P. Kempski, D. Li, D. B. Fielding, E. Quataert, E. S. Phinney, **M. W. Kunz**, D. L. Jow, A. A. Philippov, *Astrophys. J. Lett.*, in press
   A unified model of cosmic ray propagation and radio extreme scattering events from intermittent interstellar structures
3. W. Xu, Y.-F. Jiang, **M. W. Kunz**, J. M. Stone, *Astrophys. J.*, in press
   Global simulations of gravitational instability in protostellar disks with full radiation transport. I. Stochastic fragmentation with optical-depth-dependent rate and universal fragment mass
4. W. Xu, Y.-F. Jiang, **M. W. Kunz**, J. M. Stone, *Astrophys. J.*, in press
   Global simulations of gravitational instability in protostellar disks with full radiation transport. II. Locality of spiral and angular-momentum transport, implications for observable substructure
5. P. Reichherzer, A. F. A. Bott, R. J. Ewart, G. Gregori, P. Kempski, **M. W. Kunz**, A. A. Schekochihin, *Nat. Astron.*, 9, 438 (2025)
   Efficient micromirror confinement of sub-TeV cosmic rays in galaxy clusters (Cover Article)
6. M. F. Zhang*, **M. W. Kunz**, J. Squire, K. G. Klein, Astrophys. J., 979, 121 (2025)
   Extreme heating of minor ions in imbalanced solar-wind turbulence

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7. E. L. Yerger*, **M. W. Kunz**, A. F. A. Bott, A. Spitkovsky, *J. Plasma Phys.*, 91, E20 (2025)
   Collisionless conduction in a high-beta plasma: a collision operator for whistler turbulence
8. S. Majeski*, **M. W. Kunz**, J. Squire, *J. Plasma Phys.*, 90, 535900601 (2024)
   Self-organization in collisionless, high-beta turbulence
9. R. J. Ewart, P. Reichherzer, A. F. A. Bott, **M. W. Kunz**, A. A. Schekochihin, *Mon. Not. Roy. Astron. Soc.*, 532, 2098 (2024)
   Cosmic-ray confinement in radio bubbles by micromirrors
10. C. J. Bambic*, E. Quataert, **M. W. Kunz**, Y. Zhang, 2024, *Mon. Not. Roy. Astron. Soc.*, 530, 1812 (2024)
    Local models of two-temperature accretion disc coronae. II. Ion thermal conduction and the absence of disc evaporation
11. E. A. Tolman, **M. W. Kunz**, J. M. Stone, L. Arzamasskiy, *Astrophys. J.*, 967, 136 (2024)
    Tearing-mediated reconnection in magnetohydrodynamic poorly ionized plasmas. I. Onset and linear evolution
12. S. Majeski*, **M. W. Kunz**, *J. Plasma Phys.*, 90, 535900101 (2024)
    On hydrodynamic wave interactions in collisionless, high-β plasmas
13. R. A. Chirakkara, A. Seta, C. Federrath, **M. W. Kunz**, *Mon. Not. Roy. Astron. Soc.*, 528, 937 (2024)
    Critical magnetic Reynolds number of the turbulent dynamo in collisionless plasmas
14. M. Zhou, V. Zhdankin, **M. W. Kunz**, N. F. Loureiro, D. A. Uzdensky, *Astrophys. J.*, 60, 12 (2024)
    Magnetogenesis in a collisionless plasma: from Weibel instability to turbulent dynamo
15. C. J. Bambic*, E. Quataert, **M. W. Kunz**, *Mon. Not. Roy. Astron. Soc.*, 527, 2895 (2024)
    Local models of two-temperature accretion disc coronae. I. Structure, outflows, and energetics
16. J. Squire, R. Meyrand, **M. W. Kunz**, *Astrophys. J. Lett.*, 957, L30 (2023)
    Electron-ion heating partition in imbalanced turbulence
17. K. G. Klein, H. Spence, ..., **M. W. Kunz**, ..., *Space Sci. Rev.*, 219, 74 (2023)
    HelioSwarm: a multipoint, multiscale mission to characterize turbulence
18. P. Kempski, D. Fielding, E. Quataert, A. K. Galishnikova, **M. W. Kunz**, A. A. Philippov, B. Ripperda, *Mon. Not. Roy. Astron. Soc.*, 525, 4985 (2023)
    Cosmic ray transport in large-amplitude turbulence with small-scale field reversals
19. J. Squire, **M. W. Kunz**, L. Arzamasskiy, Z. Johnston, E. Quataert, A. A. Schekochihin, *J. Plasma Phys.*, 89, 905890417 (2023)
    Pressure anisotropy and viscous heating in weakly collisional plasma turbulence
20. S. Majeski*, **M. W. Kunz**, J. Squire, *J. Plasma Phys.*, 89, 905890303 (2023)
    Microphysically modified magnetosonic modes in collisionless, high-β plasmas
21. V. Zhdankin, **M. W. Kunz**, D. A. Uzdensky, *Astrophys. J.*, 944, 24 (2023)
    Synchrotron firehose instability

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22. L. Arzamasskiy*, **M. W. Kunz**, J. Squire, E. Quataert, A. A. Schekochihin, *Phys. Rev. X*, 13, 021014 (2023)
Kinetic turbulence in collisionless high-β plasmas

23. S. S. Cerri, T. Passot, D. Laveder, P.-L. Sulem, **M. W. Kunz**, *Astrophys. J.*, 939, 36 (2022; 13 pp.)
Turbulent regimes in collisions of 3D Alfvén-wave packets

24. A. K. Galishnikova*, **M. W. Kunz**, A. A. Schekochihin, *Phys. Rev. X*, 12, 041027 (2022; 16 pp.)
Tearing instability and current-sheet disruption in the turbulent dynamo

25. M. W. Kunz, T. W. Jones, I. Zhuravleva, in Section "Galaxy Clusters" (eds E. Pointecouteau, E. Rasia, A. Simionescu) of the *Handbook of X-ray and Gamma-ray Astrophysics* (eds C. Bambi, A. Santangelo) (2022; 42 pp.)
Plasma physics of the intracluster medium

26. A. F. A. Bott, L. Chen, P. Tzeferacos, C. A. J. Palmer, . . . , **M. W. Kunz**, . . . , A. A. Schekochihin, D. Q. Lamb, G. Gregori, *Matter Radiat. at Extremes*, 7, 046901 (2022; 15 pp.)
Insensitivity of a turbulent laser-plasma dynamo to initial conditions

27. H. R. Russell, P. E. J. Nulsen, D. Caprioli, U. Chadayammuri, A. C. Fabian, **M. W. Kunz**, B. R. McNamara, J. S. Sanders, A. Richard-Laferrière, M. Beleznay, R. E. A. Canning, J. Hlavacek-Larrondo, L. J. King, *Mon. Not. Roy. Astron. Soc.*, 514, 1477 (2022; 17 pp.)
The structure of cluster merger shocks: turbulent width and the electron heating timescale

28. M. Zhou, V. Zhdankin, **M. W. Kunz**, N. F. Loureiro, D. A. Uzdensky, *Proc. Nat. Acad. Sci.*, 119, 2119831119 (2022; 10 pp.)
Spontaneous magnetization of collisionless plasma

29. H. Winarto*, **M. W. Kunz**, *J. Plasma Phys.*, 88, 905880210 (2022; 25 pp.)
Triggering tearing in a forming current sheet with the mirror instability

30. J. Squire, R. Meyrand, **M. W. Kunz**, L. Arzamasskiy, A. A. Schekochihin, E. Quataert, *Nat. Astron.*, 6, 715 (2022; 9 pp.)
High-frequency heating of the solar wind triggered by low-frequency turbulence

31. H. N. Latter, **M. W. Kunz**, *Mon. Not. Roy. Astron. Soc.*, 511, 1182 (2022; 19 pp.)
The vertical shear instability in poorly ionized, magnetized protoplanetary discs

32. A. F. A. Bott, L. Arzamasskiy, **M. W. Kunz**, E. Quataert, J. Squire, *Astrophys. J. Lett.* **922**, L35 (2021; 9 pp.)
Adaptive critical balance and firehose instability in an expanding, turbulent, collisionless plasma

33. W. Xu*, **M. W. Kunz**, *Mon. Not. Roy. Astron. Soc.* **508**, 2142 (2021; 27 pp.)
Formation and evolution of protostellar accretion discs. II. From 3D simulation to a simple semi-analytic model of Class 0/I discs

34. S. S. Cerri, L. Arzamasskiy*, **M. W. Kunz**, *Astrophys. J.* **916**, 120 (2021; 22 pp.)
On stochastic heating and its phase-space signatures in low-beta kinetic turbulence

35. A. Riols, W. Xu*, G. Lesur, **M. W. Kunz**, H. Latter, *Mon. Not. Roy. Astron. Soc.* **506**, 1407 (2021; 20 pp.)
Gravito-turbulence and dynamo in poorly ionized protostellar discs. I. Zero-net-flux case

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36. W. Xu*, **M. W. Kunz**, *Mon. Not. Roy. Astron. Soc.* **502**, 4911 (2021; 19 pp.)
Formation and evolution of protostellar accretion discs. I. Angular-momentum budget, gravitational self-regulation, and numerical convergence

37. A. F. A. Bott, P. Tzeferacos, L. Chen, C. A. J. Palmer, A. Rigby, ..., **M. W. Kunz**, ..., A. A. Schekochihin, D. Q. Lamb, G. Gregori, *Proc. Nat. Acad. Soc.* **118**, e2015729118 (2021; 12 pp.)
Time-resolved fast turbulent dynamo in a laser plasma

38. V. Zhdankin, D. A. Uzdensky, **M. W. Kunz**, *Astrophys. J.* **908**, 71 (2021; 6 pp.)
Production and persistence of extreme two-temperature plasmas in radiative relativistic turbulence

39. **M. W. Kunz**, J. Squire, A. A. Schekochihin, E. Quataert, *J. Plasma Phys.* **86**, 905860603 (2020; 26 pp.)
Self-sustaining sound in high-β, collisionless plasma

40. F. Califano, S. S. Cerri, M. Faganello, D. Laveder, **M. W. Kunz**, *Front. Phys.* **8**, 317 (2020; 12 pp.)
Electron-only magnetic reconnection in plasma turbulence

41. D. A. St-Onge*, **M. W. Kunz**, J. Squire, A. A. Schekochihin, *J. Plasma Phys.* **86**, 905860503 (2020; 64 pp.)
Fluctuation dynamo in a weakly collisional plasma

42. P. Kempski, E. Quataert, J. Squire, **M. W. Kunz**, *Mon. Not. R. Astron. Soc.*, 486, 4013 (2019; 17 pp.)
Shearing-box simulations of MRI-driven turbulence in weakly collisional accretion discs

43. L. Arzamasskiy*, **M. W. Kunz**, B. D. G. Chandran, E. Quataert, *Astrophys. J.*, 879, 53 (2019; 13 pp.)
Hybrid-kinetic simulations of ion heating in Alfvénic turbulence

44. J. Squire, A. A. Schekochihin, E. Quataert, **M. W. Kunz**, *J. Plasma Phys.*, 85, 905850114 (2019; 18 pp.)
Magneto-immutable turbulence in weakly collisional plasmas

45. A. Alt*, **M. W. Kunz**, *J. Plasma Phys. Lett.*, 85, 764850101 (2019; 17 pp.)
Onset of magnetic reconnection in a collisionless, high-β plasma (Featured Article)

46. D. A. St-Onge*, **M. W. Kunz**, *Astrophys. J. Lett.*, 863, L25 (2018; 7 pp.)
Fluctuation dynamo in a collisionless, weakly magnetized plasma

47. **M. W. Kunz**, I. G. Abel, K. G. Klein, A. A. Schekochihin, *J. Plasma Phys.*, 84, 715840201 (2018; 61 pp.)
Astrophysical gyrokinetics: turbulence in pressure-anisotropic plasmas at ion scales and beyond

48. S. S. Cerri, **M. W. Kunz**, F. Califano, *Astrophys. J. Lett.*, 856, L13 (2018; 6 pp.)
Dual phase-space cascades in 3D hybrid-Vlasov–Maxwell turbulence

49. J. Squire, E. Quataert, **M. W. Kunz**, *J. Plasma Phys.*, 83, 905830613 (2017; 44 pp.)
Pressure-anisotropy-induced nonlinearities in the kinetic magnetorotational instability

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50. J. Squire, **M. W. Kunz**, E. Quataert, A. A. Schekochihin, *Phys. Rev. Lett.*, 119, 5101 (2017; 6 pp.)
Kinetic simulations of the interruption of large-amplitude shear-Alfvén waves in a high-β plasma
51. **M. W. Kunz**, J. M. Stone, E. Quataert, *Phys. Rev. Lett.*, 117, 235101 (2016; 6 pp.)
Magnetorotational turbulence and dynamo in a collisionless plasma (Editors' Suggestion)
52. R. Xu*, **M. W. Kunz**, *J. Plasma Phys.*, 82, 905820507 (2016; 54 pp.)
Linear Vlasov theory of a magnetised, thermally stratified atmosphere (Featured Article)
53. S. V. Komarov, E. M. Churazov, **M. W. Kunz**, A. A. Schekochihin, *Mon. Not. R. Astron. Soc.*, 460, 467 (2016; 10 pp.)
Thermal conduction in a mirror-unstable plasma
54. S. Melville, A. A. Schekochihin, **M. W. Kunz**, *Mon. Not. R. Astron. Soc.*, 459, 2701 (2016; 19 pp.)
Pressure-anisotropy-driven microturbulence and magnetic-field evolution in a shearing, collisionless plasma
55. C. H. K. Chen, L. Matteini, A. A. Schekochihin, M. L. Stevens, C. S. Salem, B. A. Maruca, **M. W. Kunz**, S. D. Bale, *Astrophys. J. Lett.*, 825, 26 (2016; 5 pp.)
Multi-species measurements of the firehose and mirror instability thresholds in the solar wind
56. J. B. Simon, G. Lesur, **M. W. Kunz**, P. J. Armitage, *Mon. Not. R. Astron. Soc.*, 454, 1117 (2015; 14 pp.)
Magnetically driven accretion in protoplanetary discs
57. **M. W. Kunz**, A. A. Schekochihin, C. H. K. Chen, I. G. Abel, S. C. Cowley, *J. Plasma Phys.*, 81, 325810501 (2015; 61 pp.)
Inertial-range kinetic turbulence in pressure-anisotropic astrophysical plasmas
58. J. A. ZuHone, **M. W. Kunz**, M. Markevitch, J. M. Stone, V. Biffi, *Astrophys. J.*, 798, 90 (2014; 20 pp.)
The effect of anisotropic viscosity of cold fronts in galaxy clusters
59. G. Lesur, **M. W. Kunz**, S. Fromang, *Astron. Astrophys.*, 556, 56 (2014; 17 pp.)
Thanatology in protoplanetary discs: the combined influence of Ohmic, Hall, and ambipolar diffusion on dead zones
60. **M. W. Kunz**, A. A. Schekochihin, J. M. Stone, *Phys. Rev. Lett.*, 112, 205003 (2014; 5 pp.)
Firehose and mirror instabilities in a collisionless shearing plasma (Cover Article)
61. **M. W. Kunz**, J. M. Stone, X.-N. Bai, *J. Comput. Phys.*, 259, 154 (2013; 21 pp.)
Pegasus: a new hybrid-kinetic particle-in-cell code for astrophysical plasma dynamics
62. **M. W. Kunz**, G. Lesur, *Mon. Not. R. Astron. Soc.*, 434, 2295 (2013; 18 pp.)
Magnetic self-organization in Hall-dominated magnetorotational turbulence
63. H. N. Latter, **M. W. Kunz**, *Mon. Not. R. Astron. Soc.*, 423, 1964 (2012; 8 pp.)
The HBI in a quasi-global model of the intracluster medium
64. **M. W. Kunz**, T. Bogdanović, C. S. Reynolds, J. M. Stone, *Astrophys. J.*, 754, 122 (2012; 20 pp.)
Buoyancy instabilities in a weakly collisional intracluster medium

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65. W. B. Dapp, S. Basu, **M. W. Kunz**, *Astron. Astrophys.*, 541, 35 (2012; 18 pp.)
Bridging the gap: disk formation in the Class 0 phase with ambipolar diffusion and Ohmic dissipation

66. **M. W. Kunz**, *Mon. Not. R. Astron. Soc.*, 417, 602 (2011; 14 pp.)
Dynamical stability of a thermally stratified intracluster medium with anisotropic momentum and heat transport

67. **M. W. Kunz**, A. A. Schekochihin, S. C. Cowley, J. J. Binney, J. S. Sanders, *Mon. Not. R. Astron. Soc.*, 410, 2446 (2011; 11 pp.)
A thermally stable heating mechanism for the intracluster medium: turbulence, magnetic fields and plasma instabilities

68. Matthews L. D., Greenhill L. J. Goddi C., Chandler C. J., Humphreys E. M. L., **M. W. Kunz**, *Astrophys. J.*, 708, 80 (2010; 12 pp.)
A feature movie of SiO emission 20–100 au from the massive young stellar object Orion Source I

69. **M. W. Kunz**, T. Ch. Mouschovias, *Mon. Not. R. Astron. Soc.*, 408, 322 (2010; 19 pp.)
The nonisothermal stage of magnetic star formation. II. Results

70. **M. W. Kunz**, T. Ch. Mouschovias, *Mon. Not. R. Astron. Soc.*, 399, L94 (2009; 4 pp.)
The initial core mass function due to ambipolar diffusion in molecular clouds

71. T. Ch. Mouschovias, **M. W. Kunz**, D. A. Christie, *Mon. Not. R. Astron. Soc.*, 397, 14 (2009; 9 pp.)
Formation of interstellar clouds: Parker instability with phase transitions

72. **M. W. Kunz**, T. Ch. Mouschovias, *Astrophys. J.*, 693, 1895 (2009; 16 pp)
The nonisothermal stage of magnetic star formation. I. Formulation of the problem and method of solution

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