

Prof. Blakesley K. Burkhart

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Appointments

Assistant Professor, Rutgers, the State University of New Jersey, 2019-present
Associate Research Scientist, Flatiron Institute Center for Computational Astrophysics, 2018-present
Institute for Theory and Computation (ITC) Postdoctoral Fellow, Harvard, 2017-2018,
NASA Einstein Postdoctoral Fellow, Harvard, 2014-2017

Education

Ph.D. Astronomy, University of Wisconsin-Madison, 2014
M.A. Astronomy, University of Wisconsin-Madison, 2010
M.S. Physics, University of Wisconsin-Madison, 2010
B.S. Physics & Mathematics (minor: Latin), University of Louisville, 2008, *Magna Cum Laude*

Awards and Honors

2022 Maria Goeppert Mayer Award, American Physical Society
2021 Alfred P. Sloan Research Fellowship
2020 Packard Fellowship for Science and Engineering
2019 Annie Jump Cannon Award, American Astronomical Society
2017 Robert J. Trumpler Award, Astronomical Society of the Pacific
2016 Division of Astrophysics Ph.D. Thesis Award Finalist, American Physical Society
2011 UW Madison Jansky Fellowship for Outstanding Research
2011 NASA Space Science Student Ambassador
2009 National Science Foundation Graduate Research Fellowship (Astrophysics)
2008 Donald M. Bennett Award for Outstanding Scholastic Achievement in Physics
2008 American Astronomical Society, Chambliss Award, Honorable Mention
2006 Bullitt Award in Astrophysics
2004 University of Louisville Presidential Scholarship

Recent Invited Talks (Selected; full list available on request)

2023

The Physics of Star Formation: From Stellar Cores to Galactic Scales, Lyon, FR, June
Univ. Illinois Urbana-Champaign Colloquium, April
UC Berkeley Colloquium, April
Harvard CfA Colloquium, April
KITP Galaxy Evolution with Data-Driven Astronomy, Santa Barbara, March

2022

SAGI workshop, Invited Review, Vietnam, July
University of Heidelberg Colloquium, Germany, June
EPoS 2020 The Early Phase of Star Formation - Insights from Dynamics, Invited Review, Ringberg, Germany, April
APS General Meeting, Invited Talk, March
CU Boulder Colloquium, February
Galaxy Formation Workshop, Tel Aviv, Israel, February
Arizona/Steward Colloquium, January

2021

1st VARNET Workshop on Star Formation and Stellar Feedback, December
APS MAS, Invited Review, December
NASA Cosmic Origins Program - Stars Science Interest Group Invited Review, November
JPL Colloquium, September
MagNet, Madison, WI, August
The Grand Cascade, Paris, France, July
AAS Plenary Talk, Virtual, June
AAS-LAD Invited Talk, Virtual, June

2020

UW Madison, Colloquium, December
Computational Galaxy Formation 2020, Ringberg, Germany, April
Where the Star Formation Ends, Leiden, Netherlands, March
Magnetic Fields in the Universe VI, Vietnam, February

2019

Confronting simulations with observations from pc to Mpc scale, Hunter Valley, Australia, November
LOFAR MKSP Annual Meeting, Bochum, Germany, September
SO-Star, Paris, France, September
Joint IAS/Princeton Colloquium, Princeton, March
Life and Death of Star Forming Galaxies, Perth, Australia, March

Teaching

2022 Fall, *Physics 345: Computational Astrophysics*, Rutgers
2021 Fall, *Physics 610: Interstellar Matter*, Rutgers
2020 Fall, *Honors Seminar: The Past, Present, and Future of Prediction*, Rutgers
2019 Fall, *Physics 610: Interstellar Matter*, Rutgers
2016 Spring, Guest Instructor *Ast 253, Plasma Astrophysics*, Harvard University
2014 Spring, Teaching Assistant, *Ast 104, Exploration of the Solar System*, UW Madison
2008 Spring, Teaching Assistant, *Physics 224*, University of Louisville
2006-2008 Supplemental Instructor of Physics (6 semesters), University of Louisville

Student/Postdoc Supervision

Current:

2023-current, Avi Chen, Rutgers Grad. Student
2022-current, Megan Pirecki, Rutgers Undergrad. Student
2021-current, Lori Porter, CCA Undergrad. Intern
2020-current, Megan Tillman, Rutgers Grad. Student
2019-current, Dr. Matt Orr, Rutgers/CCA Postdoctoral Scholar
2019-current, Diane Salim, Rutgers Grad. Student
2018-current, Sabrina Appel, Rutgers Grad. Student

Past:

2021-2022, Avery Kiihne, Rutgers Undergrad. Student
2019-2022, Brandon Shane, Rutgers Undergrad. Student
2018-2022, Michael Foley, Harvard Grad. Student
2020-2021, Michael O'Brien, CCA Undergrad. Intern
2018-2020, Lucas Barreto Santos, University of Sao Paulo Masters Student
2017-2019, Monica Gallegos-Garcia, Harvard Banneker & Aztlán Student
2016, Missy McIntosh, Harvard Senior Thesis
2015, Alex Gurvich, Harvard REU Student
2014, Chris Herron, UW Madison/Univ. Sydney Ph.D. Student
2012-2014, Caio Correia, UFRN Brazil Masters Student
2010, Ben Tofflemire, UW Madison REU student

Grants (total since 2019: \$2.07 million)

2022-2025, “*A Revolution for Astrophysical Turbulence Using Machine Learning*”, NASA FINESST, \$150,000
2022-2025, “*The Cosmic Origins Spectrograph as a Probe of AGN Feedback in the Low Redshift Lyman Alpha Forest*”, NASA ATP, \$354,361
2021-2023, Alfred P. Sloan Research Fellowship, \$75,000
2020-2025, Packard Fellowship for Science and Engineering, \$875,000
2020-2023, “*Shining Light on Supersonically Induced Gas Objects (SIGOs)*”, NASA ATP, \$314,000
2021-2024, “*Collaborative Research: Stars from the Clouds - Turbulence, Magnetic Fields and the Dynamics of Star Cluster Formation*”, NSF AAG, \$299,643

Conferences Organized

- 2023 Coordinator, KITP Galaxy Formation and Evolution in the Data Science Era, Santa Barbara
- 2023 SOC Co-Chair, *Hyperion/Eos Space Telescope Meeting*, New York
- 2023 SOC, *FRBs at CCA*, New York
- 2023 SOC, *Olympian Symposium*, Greece
- 2022 SOC, *From Stars to Galaxies II*, Gothenburg, Sweden
- 2021 SOC, *The Interstellar Institute*, Paris, France
- 2020 SOC Chair, *The Interstellar Medium of Galaxies in the Era of Big Data*, AAS Mini-meeting, virtual
- 2019 SOC Chair, *Universality: Turbulence Across Vast Scales*, CCA, New York, NY
- 2019 SOC Chair, *Big Apple Magnetic Fields*, CCA, New York, NY
- 2017 SOC Chair, *Harvard-Heidelberg Star Formation Workshop*, Cambridge, MA
- 2017 SOC, *Magnetic Fields in the Universe VI*, Natal, Brazil
- 2016 SOC Chair, *Star formation, magnetic fields, and diffuse matter in the Galaxy: A conference honoring the contributions of Richard Crutcher & Carl Heiles*, Madison, WI
- 2015 SOC, *Harvard-Heidelberg Star Formation Workshop*, Cambridge, MA
- 2011, 2012, 2013, 2014 Conference Co-Organizer for the *Midwest Magnetic Fields*, Madison, WI
- 2011 Conference Co-Organizer for *ISM and Magnetic Fields Workshop*, Natal, Brazil

Professional Service (selected)

- 2022-current Faculty Evaluator for the Rutgers SGS Deans Fellowships to Broaden Participation
- 2022 Hubble Postdoctoral Fellowship Selection Committee
- 2021-current CCA Computational Steering Committee
- 2021-current Hyperion UV NASA MIDEX (proposed) Space Telescope, Science Co-Lead
- 2021 Guest Editor, *Annual Review of Astronomy and Astrophysics*, Volume 59
- 2021-current Selection Committee for *The PI Launchpad: A NASA Space Mission Workshop*
- 2020-current Faculty Adviser for the Rutgers Astronomical Society
- 2020 Founder of CATS: Catalogue for Astrophysical Turbulence Simulations, mhd-turbulence.com
- 2019 Rutgers Astro Seminar/Colloquium Organizer
- 2019 *Advancing Theoretical Astrophysics Summer School*, teaching/organizing.
- 2019 *CCA Plasma Astrophysics Summer School*, teaching
- 2018-current Flatiron Research Postdoc Fellow (FRF) selection committee
- 2016-2019 NRAO Science Review Panel
- 2015, 2016 CfA Seminar & ITC Colloquium Co-Chair
- 2012-current Referee for: *Astrophysical Journal*, *Astrophysical Journal Letters*, *Astronomy & Astrophysics*, *Monthly Notices of the Royal Astronomical Society*, *Nature*, *Nature Astronomy*

Outreach (selected)

2022-current *Open Interval* Dance Choreograph Collaboration

2020-2022 Rutgers Astronomical Society Faculty mentor

2020 Rutgers Scarlet Speakers Public Talk

2013-2014 *5 Minute Astronomy*, Host of Podcast on iTunes, Featured on iTunes *New and Noteworthy*

2012-2014 *Radio Astronomy*, Host of weekly radio show WORT 89.9FM, Madison, WI

Refereed Journal Publications

h-index: 35

40 First author or student/postdoc-led papers

1. **Burkhart, B.**, Falceta-Gonçalves D., Kowal G., & Lazarian A., 2009, “*Density Studies of MHD Interstellar Turbulence: Statistical Moments, Correlations and Bispectrum*”, ApJ, 692, 250, arXiv:0811.0822
2. **Burkhart, B.**, Stanimirović S., Lazarian A., & Kowal G., 2010, “*Characterizing Magnetohydrodynamic Turbulence in the Small Magellanic Cloud*”, ApJ, 708, 1204, arXiv:0911.3652
3. ++Tofflemire, B. M., **Burkhart, B.**, & Lazarian, A., 2011, “*Interstellar Sonic and Alfvénic Mach Numbers and the Tsallis Distribution*”, ApJ, 736, 60, arXiv:1103.3299¹
4. Gaensler, B. M., Haverkorn, M., **Burkhart, B.**, Newton-McGee, K. J., Ekers, R. D., Lazarian, A., McClure-Griffiths, N. M., Robishaw, T., Dickey, J. M., & Green, A. J., 2011, “*Low-Mach-number turbulence in interstellar gas revealed by radio polarization gradients*”, Nature, 478, 214, arXiv:1110.2896
5. **Burkhart, B.**, Lazarian A., & Gaensler B. M., 2012, “*Properties of Interstellar Turbulence from Gradients of Linear Polarization Maps*”, ApJ, 749, 145, arXiv:1111.3544
6. **Burkhart, B.** & Lazarian A., 2012, “*The Column Density Variance- \mathcal{M}_s Relationship*”, ApJ, 755, L19, arXiv:1205.3792
7. Saul, D. R., Peek, J. E. G., Grcevich, J., Putman, M. E., Douglas, K. A., Korpela, E. J., Stanimirović, S., Heiles, C., Gibson, S. J., Lee, M., Begum, A., Brown, A. R. H., **Burkhart, B.**, Hamden, E. T., Pingel, N. M., & Tonnesen, S., 2012, “*The GALFA-HI Ultra-Compact Cloud Catalog*”, ApJ, 758, 44, arXiv:1208.4103
8. **Burkhart, B.**, Lazarian, A., Goodman, A., & Rosolowsky, E., 2013, “*Hierarchical Structure of Magnetohydrodynamic Turbulence in Position-position-velocity Space*”, ApJ, 770, 141, arXiv:1206.4703
9. **Burkhart, B.**, Ossenkopf, V., Lazarian, A., & Stutzki, J., 2013, “*The Effects of Radiative Transfer on the Probability Distribution Functions of Molecular Magnetohydrodynamic Turbulence*”, ApJ, 771, 122, arXiv:1304.3131
10. **Burkhart, B.**, Lazarian, A., Ossenkopf V., & Stutzki J., 2013, “*The Turbulence Power Spectrum in Optically Thick Interstellar Clouds*”, ApJ, 771, 123, arXiv:1305.3619
11. Pingel, N., Stanimirović, S., Peek, J. E. G., Lee, M.-Y., Lazarian, A., **Burkhart, B.**, Begum, A., Douglas, K. A., Heiles, C., Gibson, S. J., Grcevich, J., Korpela, E. J., Lawrence, A., Murray, C., Putman, M. E., & Saul, D., 2013, “*Characterizing the Turbulent Properties of the Starless Molecular Cloud MBM 16*”, ApJ, 779, 36, arXiv:1310.7244
12. ++Correia, C., **Burkhart, B.**, Lazarian, A., Ossenkopf, V., Stutzki, J., Kainulainen J., Kowal, G., & de Medeiros, J. R., 2013, “*Opacity Broadening of ^{13}CO Linewidths and its Effects on the Variance-Sonic Mach Number Relation*”, ApJ, 785, L1, arXiv:1402.6702
13. Meyer, C. D., Balsara, D. S., **Burkhart, B.**, & Lazarian, A., 2013, “*Observational diagnostics for two-fluid turbulence in molecular clouds as suggested by simulations*”, MNRAS, 439, 219, arXiv:1307.3527

¹++ denotes a student or postdoc primarily mentored by B. B.

14. ++Iacobelli, M., **Burkhart, B.**, Haverkorn, M., Lazarian, A., Carretti, E., Staveley-Smith, L., Gaensler, B. M., Bernardi, G., Kesteven, M. J., & Poppi, S., 2014, “*Galactic interstellar turbulence across the southern sky seen through spatial gradients of the polarization vector*”, A&A, 566, A5, arXiv:1404.6077
15. **Burkhart, B.**, Lazarian A., Leão, I. C., & de Medeiros, J. R., 2014, “*Measuring the Alfvénic Nature of the Interstellar Medium: Velocity Anisotropy Revisited*”, ApJ, 790, 130, arXiv:1408.4858
16. **Burkhart, B.**, Lazarian A., Balsara, D., Meyer, C., & Cho, J., 2015, “*Alfvénic Turbulence Beyond the Ambipolar Diffusion Scale*”, ApJ, 805, 118, arXiv:1412.3452
17. **Burkhart, B.**, Collins, D. C., & Lazarian, A., 2015, “*Observational Diagnostics of Self-gravitating MHD Turbulence in Giant Molecular Clouds*”, ApJ, 808, 48, arXiv:1505.03855
18. Chepurnov, A., **Burkhart, B.**, Lazarian, A., & Stanimirović, S., 2015, “*The Turbulence Velocity Power of Neutral Hydrogen in the Small Magellanic Cloud*”, ApJ, 810, 33, arXiv:1506.03448
19. **Burkhart, B.**, Lee, M.-Y., Murray, C. E., & Stanimirović, S., 2015, “*The Lognormal Probability Distribution Function of the Perseus Molecular Cloud: A Comparison of HI and Dust*”, ApJ, 811, L28, arXiv:1509.02889
20. ++Correia, C., Lazarian, A., **Burkhart, B.**, Pogosyan, D., & de Medeiros, J. R., 2016, “*Principal Component Analysis Studies of Turbulence in Optically Thick Gas*”, ApJ, 818, 118, arXiv:1511.03712
21. ++Herron, C. A., **Burkhart, B.**, Lazarian, A., Gaensler, B. M., & McClure-Griffiths, N. M., 2015, “*Radio Synchrotron Fluctuation Statistics as a Probe of Magnetized Interstellar Turbulence*”, ApJ, 822, 13, arXiv:1603.02751
22. Krumholz, M. R. & **Burkhart, B.**, 2016, “*Is turbulence in the interstellar medium driven by feedback or gravity? An observational test*”, MNRAS, 458, 1671, arXiv:1512.03439
23. **Burkhart, B.** & Loeb, A., 2016, “*Predicted Sizes of Pressure-Supported HI Clouds in the Outskirts of the Virgo Cluster*”, ApJ, 834, L7, arXiv:1604.01767
24. **Burkhart, B.** & Lazarian, A., 2016, “*The Phase Coherence of Interstellar Density Fluctuations*”, ApJ, 827, 26, arXiv:1511.03660
25. Imara, N. & **Burkhart, B.**, 2016, “*The HI Probability Distribution Function and the Atomic-to-molecular Transition in Molecular Clouds*”, ApJ, 829, 2, arXiv:1609.04817
26. **Burkhart, B.**, Stalpes, K., & Collins, D. C., 2017, “*The Razor’s Edge of Collapse: The Transition Point from Lognormal to Power-Law Distributions in Molecular Clouds*”, ApJ, 834, L1, arXiv:1609.04409
27. ++Gurvich, A., **Burkhart, B.**, & Bird, S., 2017, “*The Effect of AGN Heating on the Low-redshift Ly α Forest*”, ApJ, 835, 175, arXiv:1608.03293
28. Hoang, T., Lazarian, A., **Burkhart, B.**, & Loeb, A., 2017, “*The Interaction of Relativistic Spacecrafts with the Interstellar Medium*”, ApJ, 837, 5, arXiv:1608.05284
29. Mocz, P., **Burkhart, B.**, Hernquist, L., McKee, C. F., & Springel, V., 2017, “*Moving-mesh Simulations of Star-forming Cores in Magneto-gravo-turbulence*”, ApJ, 838, 40, arXiv:1702.06133
30. Herron, C. A., Federrath, C., Gaensler, B. M., McClure-Griffiths, N. M., & **Burkhart, B.**, 2017, “*Probes of turbulent driving mechanisms in molecular clouds from fluctuations in synchrotron intensity*”, MNRAS, 466, 2272, arXiv:1612.05672
31. Hull, C. L. H., Mocz, P., **Burkhart, B.**, Goodman, A. A., Girart, J. M., Cortés, P. C., Hernquist, L., Springel, V., Li, Z.-Y., & Lai, S.-P., 2017, “*Unveiling the Role of the Magnetic Field at the Smallest Scales of Star Formation*”, ApJ, 842, L9, arXiv:1706.03806
32. ++Bialy, S., **Burkhart, B.**, & Sternberg, A., 2017, “*The HI-to-H₂ Transition in a Turbulent Medium*”, ApJ, 843, 92, arXiv:1703.08549
33. **Burkhart, B.** & Loeb, A., 2017, “*The Detectability of Radio Auroral Emission from Proxima b*”, ApJ, 849, L10, arXiv:1706.07038

34. ++Herron, C. A., **Burkhart, B.**, Gaensler, B. M., Lewis, G. F., McClure-Griffiths, N. M., Bernardi, G., Carretti, E., Haverkorn, M., Kesteven, M., Poppi, S., & Staveley-Smith, L., 2018, “*Advanced Diagnostics for the Study of Linearly Polarized Emission. II. Application to Diffuse Interstellar Radio Synchrotron Emission*”, ApJ, 855, 29, arXiv:1802.05403
35. ++Pingel, N. M., Lee, M.-Y., **Burkhart, B.**, & Stanimirović, S., 2018, “*Multi-phase Turbulence Density Power Spectra in the Perseus Molecular Cloud*”, ApJ, 856, 136, arXiv:1802.10092
36. ++Chen, H. H.-H., **Burkhart, B.**, & Goodman, A., 2018, “*The Anatomy of the Column Density Probability Distribution Function (N-PDF)*”, ApJ, 859, 162, arXiv:1707.09356
37. Kong, S., et al. (including **Burkhart, B.** and 36 co-authors), 2018, “*The CARMA-NRO Orion Survey*”, ApJS, 236, 25, arXiv:1803.11522
38. Krumholz, M., **Burkhart, B.**, Forbes, J., & Crocker, R., “*A unified model for galactic discs: star formation, turbulence driving, and mass transport*”, 2018, MNRAS, 477, 2716, arXiv:1706.00106
39. Portillo, S. K. N., Slepian, Z., **Burkhart, B.**, Kahraman, S., & Finkbeiner, D. P., 2018, “*Developing the 3-point Correlation Function for the Turbulent Interstellar Medium*”, ApJ, 862, 119, arXiv:1711.09907
40. **Burkhart, B.**, 2018, “*The Star Formation Rate in the Gravoturbulent Interstellar Medium*”, ApJ, 863, 118, arXiv:1801.05428
41. Yuen, K. H., Chen, J., Hu, Y., Ho, K. W., Lazarian, A., Lazarian, V., Yang, B., **Burkhart, B.**, Correia, C., Cho, J., Canto, B., & de Medeiros, J. R., 2018, “*Statistical Tracing of Magnetic Fields: Comparing and Improving the Techniques*”, ApJ, 865, 54, arXiv:1804.02732
42. Mocz, P. & **Burkhart, B.**, 2018, “*Star formation from dense shocked regions in supersonic isothermal magnetoturbulence turbulence*”, MNRAS, 480, 3916, arXiv:1805.11105
43. González-Casanova, D., Lazarian, A., & **Burkhart, B.**, 2019, “*Velocity centroid gradients for absorbing media*”, MNRAS, 483, 1287, arXiv:1703.03035
44. Chiou, Y., Naoz, S., **Burkhart, B.**, Marinacci, F., & Vogelsberger, M., 2019, “*The Supersonic Project: Shining Light on SIGOs — A New Formation Channel for Globular Clusters*”, ApJ, 878, L23, arXiv:1904.08941
45. Koch, E. W., Rosolowsky, E. W., Boyden, R. D., **Burkhart, B.**, Ginsburg, A., Loeppky, J. L., & Offner, S. S. R., 2019, “*TURBUSTAT: Turbulence Statistics in Python*”, AJ, 158, 1, arXiv:1904.10484
46. **Burkhart, B.** & Mocz, P., 2019, “*The Self-gravitating Gas Fraction and the Critical Density for Star Formation*”, ApJ, 879, 129, arXiv:1805.11104
47. Peek, J. & **Burkhart, B.**, 2019, “*Do Androids Dream of Magnetic Fields? Using Neural Networks to Interpret the Turbulent Interstellar Medium*”, ApJ, 882, L12, arXiv:1905.00918
48. Basu, A., Schwarz, D. J., Klöckner, H.-R., von Hausegger, S., Kramer, M., Wieching, G., & **Burkhart, B.**, 2019, “*CMB foreground measurements through broad-band radio spectro-polarimetry: prospects of the SKA-MPG telescope*”, MNRAS, 488, 161, arXiv:1906.04788
49. Mocz, P. & **Burkhart, B.**, 2019, “*A Markov Model for Non-lognormal Density Distributions in Compressive Isothermal Turbulence*”, ApJ, 884, L35, arXiv:1908.00544
50. Bialy, S., Neufeld, D., Wolfire, M., Sternberg, A., & **Burkhart, B.**, 2019, “*Chemical Abundances in a Turbulent Medium — H_2 , OH^+ , H_2O^+ , ArH^+* ”, ApJ, 885, 109, arXiv:1909.12305
51. Basu, A., Fletcher, A., Mao, S. A., **Burkhart, B.**, Beck, R., & Schnitzeler, D., 2019, “*An In-depth Investigation of Faraday Depth Spectrum Using Synthetic Observations of Turbulent MHD Simulations*”, Galaxies, 7, 89, arXiv:1911.09029
52. Rosen, A. L., Li, P. S., Zhang, Q., & **Burkhart, B.**, 2019, “*Massive-star Formation via the Collapse of Subvirial and Virialized Turbulent Massive Cores*”, ApJ, 887, 108, arXiv:1902.10153
53. Raymond, J. C., Chilingarian, I. V., Blair, W. P., Sankrit, R., Slavin, J. D., & **Burkhart, B.**, 2020, “*Turbulence and Energetic Particles in Radiative Shock Waves in the Cygnus Loop. I. Shock Properties*”, ApJ, 894, 108, arXiv:2004.09567

54. Bialy, S. & **Burkhart, B.**, 2020, “*The Driving Scale-Density Decorrelation Scale Relation in a Turbulent Medium*”, ApJ, 894, L2, arXiv:1909.12305
55. ++Gallegos-Garcia, M., **Burkhart, B.**, Rosen, A. L., Naiman, J. P., & Ramirez-Ruiz, E., 2020, “*Winds in Star Clusters Drive Kolmogorov Turbulence*”, ApJ, 899, L30, arXiv:2006.14626
56. Heyer, M., Soler, J. D., & **Burkhart, B.**, 2020, “*The relative orientation between the magnetic field and gradients of surface brightness within thin velocity slices of ^{12}CO and ^{13}CO emission from the Taurus molecular cloud*”, MNRAS, 496, 4546, arXiv:2006.10775
57. Yuan, Y., Krumholz, M. R., & **Burkhart, B.**, 2020, “*Understanding biases in measurements of molecular cloud kinematics using line emission*”, MNRAS, 498, 2440, arXiv:2007.13488
58. Raymond, J. C., Slavin, J. D., Blair, W. P., Chilingarian, I. V., **Burkhart, B.**, & Sankrit, R., 2020, “*Turbulence and Energetic Particles in Radiative Shock Waves in the Cygnus Loop. II. Development of Postshock Turbulence*”, ApJ, 903, 2, arXiv:2010.12911
59. Pandya, V., Somerville, R. S., Anglés-Alcázar, D., Hayward, C. C., Bryan, G. L., Fielding, D. B., Forbes, J. C., **Burkhart, B.**, Genel, S., Hernquist, L., Kim, C.-G., Tonnesen, S., & Starckenburg, T., 2020, “*First Results from SMAUG: The Need for Preventative Stellar Feedback and Improved Baryon Cycling in Semianalytic Models of Galaxy Formation*”, ApJ, 905, 4, arXiv:2006.16317
60. **Burkhart, B.**, et al., 2020, “*The Catalogue for Astrophysical Turbulence Simulations (CATS)*”, ApJ, 905, 14, arXiv:2010.11227
61. Chiou, Y. S., Naoz, S., **Burkhart, B.**, Marinacci, F., & Vogelsberger, M., 2021, “*The Supersonic Project: To Cool or Not to Cool Supersonically Induced Gas Objects (SIGOs)?*”, ApJ, 906, 25, arXiv:2008.02808
62. Takemura, H. et al. (including **Burkhart, B.** and 30 co-authors), 2021, “*The Core Mass Function in the Orion Nebula Cluster Region: What Determines the Final Stellar Masses?*”, 2021, ApJ, 910, L6, arXiv:2103.08527
63. Saydjari, A. K., Portillo, S. K. N., Slepian, Z., Kahraman, S., **Burkhart, B.**, & Finkbeiner, D. P., 2021, “*Classification of Magnetohydrodynamic Simulations Using Wavelet Scattering Transforms*”, ApJ, 910, 122, arXiv:2010.11963
64. ++Barreto-Mota, L., de Gouveia Dal Pino, E. M., **Burkhart, B.**, Melioli, C., Santos-Lima, R., & Kadowaki, L. H. S., 2021, “*Magnetic field orientation in self-gravitating turbulent molecular clouds*”, MNRAS, 503, 5425, arXiv:2101.03246
65. Villaescusa-Navarro, F., Anglés-Alcázar, D., Genel, S., Spergel, D. N., Somerville, R. S., Davé, R., Pillepich, A., Hernquist, L., Nelson, D., Torrey, P., Narayanan, D., Li, Y., Philcox, O., La Torre, V., Delgado, A. M., Ho, S., Hassan, S., **Burkhart, B.**, Wadekar, D., Battaglia, N., & Contardo, G., 2021, “*The CAMELS Project: Cosmology and Astrophysics with Machine Learning Simulations*”, ApJ, 915, 71, arXiv:2010.00619
66. Smith, M. C., Bryan, G. L., Somerville, R. S., Hu, C.-Y., Teyssier, R., **Burkhart, B.**, & Hernquist, L., 2021, “*Efficient early stellar feedback can suppress galactic outflows by reducing supernova clustering*”, MNRAS, 506 3882, arXiv:2009.11309
67. **Burkhart, B.**, 2021, “*Diagnosing the Magnetized Turbulent Interstellar Medium of Galaxies*”, a review in the *Publications of the Astronomical Society of the Pacific*, 133, 1028 , arXiv:2106.02239
68. Olsen, K., **Burkhart, B.**, Mac Low, M. M., Treß, R. G., Greve, T. R., Vizgan, D., Motka, J., Borrow, J., Popping, G., Davé, R., Smith, R. J., & Narayan, D., 2021, “*SIGAME v3: Gas Fragmentation in Post-processing of Cosmological Simulations for More Accurate Infrared Line Emission Modeling*”, ApJ, 922, 880, arXiv:2102.02868
69. Nelson, E. J., Tacchella, S., Diemer, B., Leja, J., Hernquist, L., Whitaker, K. E., Weinberger, R., Pillepich, A., Nelson, D., Terrazas, B. A., Nevin, R., Brammer, G. E., **Burkhart, B.**, Cochrane, R., van Dokkum P., Johnson, B. D., Mowla, L., Pakmor, R., Skelton, R., Speagle, J., Springel, V., Torrey, P., Vogelsberger, M., & Wuyts, S., 2021, “*Spatially resolved star formation and inside-out quenching in the TNG50 simulation and 3D-HST observations*”, MNRAS, 508, 219, arXiv:2101.12212

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