Drummond B. Fielding

Publication List

Flatiron Research Fellow
Center for Computational Astrophysics, Flatiron Institute,
162 Fifth Ave., New York, NY 10010, USA
drummondfielding@gmail.com dfielding14.github.io arXiv

Publications — *ADS search* — *ORCID*

First Author

8 **Fielding, D. B.**; Ripperda, B.; Philippov, A. A., *Plasmoid Instability in the Multiphase Interstellar Medium*, 2022 (arXiv:2211.06434)

7 **Fielding, D. B.**; Bryan, G. L., *The Structure of Multiphase Galactic Winds*, ApJ, **924**, 82, 2022 (arXiv:2108.05355) [24 citations]

6 **Fielding, D. B.**; Tonnesen, S.; DeFelippis, D.; Li, M. *et al.*, *First Results from SMAUG: Uncovering the Origin of the Multiphase Circumgalactic Medium with a Comparative Analysis of Idealized and Cosmological Simulations*, ApJ, **903**, 32, 2020 (arXiv:2006.16316) [30 citations]

5 **Fielding, D. B.**; Ostriker, E. C.; Bryan, G. L.; Jermyn, A. S., *Multiphase Gas and the Fractal Nature of Radiative Turbulent Mixing Layers*, ApJ, **894**, 2020 (arXiv:2003.08390) [65 citations]

4 **Fielding, D. B.**; Quataert, E.; Martizzi, D., *Clustered supernovae drive powerful galactic winds after superbubble breakout*, MNRAS, **481**, 3325, 2018 (arXiv:1807.08758) [87 citations]

3 **Fielding, D. B.**; Quataert, E.; Martizzi, D.; Faucher-Giguère, C., *How supernovae launch galactic winds*, MNRAS, **470**, 2017 (arXiv:1704.01579) [61 citations]

2 **Fielding, D. B.**; Quataert, E.; McCourt, M.; Thompson, T. A., *The impact of star formation feedback on the circumgalactic medium*, MNRAS, **466**, 3810, 2017 (arXiv:1606.06734) [111 citations]

1 **Fielding, D. B.**; McKee, C. F.; Socrates, A.; Cunningham, A. J. *et al.*, *The turbulent origin of spin-orbit misalignment in planetary systems*, MNRAS, **450**, 3306, 2015 (arXiv:1409.5148) [73 citations]

Second Author (*=primary mentor for student led project)

10 *Chen, Z.; **Fielding, D. B.**; Bryan, G. L., *The Anatomy of a Turbulent Radiative Mixing Layer: Insights from an Analytic Model with Turbulent Conduction and Viscosity*, 2022 (arXiv:2211.01395)

9 *Abruzzo, M. W.; **Fielding, D. B.**; Bryan, G. L., *Taming the TuRMoiL: The Temperature Dependence of Turbulence in Cloud-Wind Interactions*, 2022 (arXiv:2210.15679)

8 Orr, M. E.; **Fielding, D. B.**; Hayward, C. C.; Burkhart, B., *Bursting Bubbles: Feedback from Clustered Supernovae and the Trade-off Between Turbulence and Outflows*, ApJ, **932**, 88, 2022 (arXiv:2109.14656) [7 citations]

7 Orr, M. E.; **Fielding, D. B.**; Hayward, C. C.; Burkhart, B., *Bursting Bubbles: Clustered Supernova Feedback in Local and High-redshift Galaxies*, ApJ, **924**, 2022 (arXiv:2109.14626) [3 citations]

6 *Pandya, V.; **Fielding, D. B.**; Anglés-Alcázar, D.; Somerville, R. S. *et al.*, *Characterizing mass, momentum, energy, and metal outflow rates of multiphase galactic winds in the FIRE-2 cosmological simulations*, MNRAS, **508**, 2979, 2021 (arXiv:2103.06891) [26 citations]

5 Stachenfeld, K.; **Fielding, D. B.**; Kochkov, D.; Cranmer, M. *et al.*, *Learned Coarse Models for Efficient Turbulence Simulation*, 2021 (arXiv:2112.15275) [8 citations]

4 *Butsky, I. S.; **Fielding, D. B.**; Hayward, C. C.; Hummels, C. B. *et al.*, *The Impact of Cosmic Rays on Thermal Instability in the Circumgalactic Medium*, ApJ, **903**, 77, 2020 (arXiv:2008.04915) [45 citations]

3 Stern, J.; **Fielding, D. B.**; Faucher-Giguère, C.; Quataert, E., *The maximum accretion rate of hot gas in dark matter haloes*, MNRAS, **492**, 6042, 2020 (arXiv:1909.07402) [27 citations]

2 Stern, J.; **Fielding, D. B.**; Faucher-Giguère, C.; Quataert, E., *Cooling flow solutions for the circumgalactic medium*, MNRAS, **488**, 2549, 2019 (arXiv:1906.07737) [42 citations]

1 Martizzi, D.; **Fielding, D. B.**; Faucher-Giguère, C.; Quataert, E., *Supernova feedback in a local vertically stratified medium: interstellar turbulence and galactic winds*, MNRAS, **459**, 2311, 2016 (arXiv:1601.03399) [83 citations]

Co-author

16 Carr, C.; Bryan, G. L.; **Fielding, D. B.**; Pandya, V. *et al.*, *Regulation of Star Formation by a Hot Circumgalactic Medium*, 2022 (arXiv:2211.05115)

15 Reichardt Chu, B. *et al.* (incl. **DBF**), *DUVET: Spatially Resolved Observations of Star Formation Regulation via Galactic Outflows in a Starbursting Disk Galaxy*, 2022 (arXiv:2211.02063)

14 Butsky, I. S.; Werk, J. K.; Tchernyshyov, K.; **Fielding, D. B.** *et al.*, *The Impact of Cosmic Rays on the Kinematics of the Circumgalactic Medium*, ApJ, **935**, 69, 2022 (arXiv:2106.14889) [7 citations]

13 Hafen, Z. *et al.* (incl. **DBF**), *Hot-mode accretion and the physics of thin-disc galaxy formation*, MNRAS, **514**, 5056, 2022 (arXiv:2201.07235) [14 citations]

12 Abruzzo, M. W.; Bryan, G. L.; **Fielding, D. B.**, *A Simple Model for Mixing and Cooling in Cloud-Wind Interactions*, ApJ, **925**, 199, 2022 (arXiv:2101.10344) [14 citations]

11 Stern, J. *et al.* (incl. **DBF**), *Neutral CGM as damped Ly α absorbers at high redshift*, MNRAS, **507**, 2869, 2021 (arXiv:2105.06489) [8 citations]

10 Stern, J.; Faucher-Giguère, C.; **Fielding, D. B.**; Quataert, E. *et al.*, *Virialization of the Inner CGM in the FIRE Simulations and Implications for Galaxy Disks, Star Formation, and Feedback*, ApJ, **911**, 88, 2021 (arXiv:2006.13976) [43 citations]

9 Pandya, V. *et al.* (incl. **DBF**), *First Results from SMAUG: The Need for Preventative Stellar Feedback and Improved Baryon Cycling in Semianalytic Models of Galaxy Formation*, ApJ, **905**, 4, 2020 (arXiv:2006.16317) [22 citations]

8 Burkhart, B. *et al.* (incl. **DBF**), *The Catalogue for Astrophysical Turbulence Simulations (CATS)*, ApJ, **905**, 14, 2020 (arXiv:2010.11227) [8 citations]

7 Kim, C.; Ostriker, E. C.; **Fielding, D. B.**; Smith, M. C. *et al.*, *A Framework for Multiphase Galactic Wind Launching Using TIGRESS*, ApJ, **903**, 2020 (arXiv:2010.09090) [16 citations]

6 Kim, C. *et al.* (incl. **DBF**), *First Results from SMAUG: Characterization of Multiphase Galactic Outflows from a Suite of Local Star-forming Galactic Disk Simulations*, ApJ, **900**, 61, 2020 (arXiv:2006.16315) [48 citations]

5 Lochhaas, C. *et al.* (incl. **DBF**), *Properties of the simulated circumgalactic medium*, MNRAS, **493**, 1461, 2020 (arXiv:1908.00021) [24 citations]

4 Martizzi, D.; Quataert, E.; Faucher-Giguère, C.; **Fielding, D. B.**, *Simulations of jet heating in galaxy clusters: successes and challenges*, MNRAS, **483**, 2465, 2019 (arXiv:1805.06461) [36 citations]

3 Stern, J. *et al.* (incl. **DBF**), *Does Circumgalactic O VI Trace Low-pressure Gas Beyond the Accretion Shock? Clues from H I and Low-ion Absorption, Line Kinematics, and Dust Extinction*, ApJ, **865**, 91, 2018 (arXiv:1803.05446) [37 citations]

2 Offner, S. S. R. *et al.* (incl. **DBF**), *The Turbulent Origin of Outflow and Spin Misalignment in Multiple Star Systems*, ApJ, **827**, 2016 (arXiv:1606.08445) [68 citations]

1 Schlieder, J. E. *et al.* (incl. **DBF**), *The Na 8200 Å Doublet as an Age Indicator in Low-mass Stars*, AJ, **143**, 114, 2012 (arXiv:1202.4191) [60 citations]

Submitted & In Prep.

- **Fielding, D. B.**; Chen, Z.; Bryan, G. L., *The Anatomy of a Turbulent Radiative Mixing Layer: Essential properties of 3D Simulations* [on arXiv by 15 Dec 2022]
- Smith, M.; **Fielding, D. B.**; Bryan, G. L.; Kim, C.G.; Ostriker, E.; Somerville, R., *Arkenstone I* [on arXiv by 30 Nov 2022]
- Pandya, V.; **Fielding, D. B.**; Bryan, G. L.; Carr, C.; Somerville, R., *A unified model for the co-evolution of galaxies and their circumgalactic medium: the relative roles of turbulence and atomic cooling physics*[Submitted to ApJ—on arXiv by 18 Nov 2022]
- *Tan, B.; **Fielding, D. B.**; *The Fate of Cold Clouds in Realistic Galactic Winds*[on arXiv by 15 Dec 2022]
- *Chow, A.; **Fielding, D. B.**; Bryan, G. L., *Modeling Non-homogeneous Cold Cloud Population in Multiphase Galactic Winds*[on arXiv by 1 Dec 2022]
- Stern, J.; **Fielding, D. B.**; Naor, N., *On the structure of hot, rotating, turbulent CGM and how they feed disk galaxies*[on arXiv by 15 Dec 2022]
- Damle, M., Tonnesen, S., **Fielding, D. B.**; Sparre, M., *How satellites influence the cold CGM around TNG50 galaxies*[on arXiv by 15 Dec 2022]
- Roy, M., Su, K.Y., Tonnesen, S., **Fielding, D. B.**, *Seeding the CGM; How Satellites Populate the Cold Phase of Milky Way Halos*[on arXiv by 15 Dec 2022]
- Coil, A. L. *et al.* (incl. **DBF**), *Detection of Spatially Extended Ionized Gas in an Odd Radio Circle*[Submitted to Nature—on arXiv 15 Dec 2022]