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I have published a total of 63 refereed papers, of which 19 as first author or corresponding author in an alphabetically ordered list. All papers combined have more than 3150 citations and my H-index is 37.

REFEREED
PUBLICATIONS

1. A. E. Broderick, P. Tiede, M. Shalaby, **C. Pfrommer**, E. Puchwein, P. Chang, A. Lamberts, *Bow Ties in the Sky I: The Angular Structure of Inverse Compton Gamma-ray Halos in the Fermi Sky*, 2016, in print.
2. C. M. Simpson, R. Pakmor, F. Marinacci, **C. Pfrommer**, V. Springel, S. C. O. Glover, O. C. Clark, R. J. Smith, *The role of cosmic ray pressure in accelerating galactic outflows*, 2016, *ApJL*, 827, L29.
3. R. Pakmor, **C. Pfrommer**, C. Simpson, R. Kannan, V. Springel, *Semi-implicit anisotropic cosmic ray transport on an unstructured moving mesh*, 2016, *MNRAS*, 462, 2603.
4. R. Pakmor, **C. Pfrommer**, C. Simpson, V. Springel, *Galactic winds driven by isotropic and anisotropic cosmic ray diffusion in disk galaxies*, 2016, *ApJL*, 824, L30.
5. K. Schaal, V. Springel, R. Pakmor, **C. Pfrommer**, D. Nelson, M. Vogelsberger, S. Genel, A. Pillepich, D. Sijacki, L. Hernquist, *Shock finding on a moving-mesh: II. Hydrodynamic shocks in the Illustris universe*, 2016, *MNRAS*, 461, 4441.
6. F.-Y. Cyr-Racine, K. Sigurdson, J. Zavala, T. Bringmann, M. Vogelsberger, **C. Pfrommer**, *ETHOS - An Effective Theory of Structure Formation: From dark particle physics to the matter distribution of the Universe*, 2016, *PRD*, 93, id.123527.
7. M. Vogelsberger, J. Zavala, F.-Y. Cyr-Racine, **C. Pfrommer**, T. Bringmann, K. Sigurdson, *ETHOS - An Effective Theory of Structure Formation: Dark matter physics as a possible explanation of the small-scale CDM problems*, 2016, *MNRAS*, 460, 1399.
8. The MAGIC Collaboration: M. L. Ahnen et al. (incl. **C. Pfrommer**), *Deep observation of the NGC 1275 region with MAGIC: search of diffuse gamma-ray emission from cosmic rays in the Perseus cluster*, 2016, *A&A*, 589, A33.
9. A. Lamberts, P. Chang, **C. Pfrommer**, E. Puchwein, A. E. Broderick, M. Shalaby, *Patchy blazar heating: diversifying the thermal history of the intergalactic medium* 2015, *ApJ*, 811, 19.
10. N. Battaglia, J. R. Bond, **C. Pfrommer (corresponding author)**, J. L. Sievers, *On the cluster physics of Sunyaev-Zel'dovich and X-ray surveys IV: characterizing density and pressure clumping due to infalling substructures*, 2015, *ApJ*, 806, 43.
11. P. Chang, A. E. Broderick, **C. Pfrommer**, E. Puchwein, A. Lamberts, M. Shalaby, *The effect of nonlinear Landau damping on ultrarelativistic beam plasma instabilities*, 2014, *ApJ*, 797, 110.

12. A. E. Broderick, **C. Pfrommer**, E. Puchwein, P. Chang, K. Smith, *Lower limits upon the anisotropy of the extragalactic gamma-ray background implied by the 2FGL and 1FHL catalogs*, 2014, *ApJ*, 796, 12.
13. A. E. Broderick, **C. Pfrommer**, E. Puchwein, P. Chang, *Implications of plasma beam instabilities for the statistics of the Fermi hard gamma-ray blazars and the origin of the extragalactic gamma-ray background*, 2014, *ApJ*, 790, 137.
14. The Fermi/LAT Collaboration: M. Ackermann et al., incl. **C. Pfrommer (corresponding author)**, *Search for cosmic-ray induced gamma-ray emission in galaxy clusters*, 2014, *ApJ*, 787, 18.
15. F. Fontanot, S. Cristiani, **C. Pfrommer**, G. Cupani, E. Vanzella, *On the evolution of the cosmic ionizing background*, 2014, *MNRAS*, 438, 2097.
16. F. Zandanel, **C. Pfrommer**, F. Prada, *On the physics of radio halos: scaling relations and luminosity functions*, 2014, *MNRAS*, 438, 124.
17. F. Zandanel, **C. Pfrommer**, F. Prada, *A phenomenological model for the intracluster medium that matches X-ray and Sunyaev-Zeldovich observations*, 2014, *MNRAS*, 438, 116.
18. T. Bringmann & **C. Pfrommer**, *Bringmann and Pfrommer Reply*, 2013, *Phys. Rev. Lett.* 111, 199002.
19. **C. Pfrommer**, *Toward a comprehensive model for feedback by active galactic nuclei: new insights from M87 observations by LOFAR, Fermi and H.E.S.S.*, 2013, *ApJ*, 779, 10.
20. A. Hajian, N. Battaglia, D. N. Spergel, J. R. Bond, **C. Pfrommer**, J. L. Sievers, *Measuring the thermal Sunyaev-Zel'dovich Effect through the cross correlation of Planck and WMAP maps with ROSAT galaxy cluster catalogs*, 2013, *JCAP*, 11, 64.
21. N. Battaglia, J. R. Bond, **C. Pfrommer (corresponding author)**, J. L. Sievers, *On the cluster physics of Sunyaev-Zel'dovich and X-ray surveys III: measurement biases and cosmological evolution of gas and stellar mass fractions*, 2013, *ApJ*, 777, 123.
22. A. Pinzke, S. P. Oh, **C. Pfrommer**, *Giant radio relics in galaxy clusters: re-acceleration of fossil relativistic electrons?*, 2013, *MNRAS*, 435, 1061.
23. L. G. van den Aarssen, T. Bringmann, **C. Pfrommer**, *Dark matter with long-range interactions as a solution to all small-scale problems of Λ CDM cosmology?* 2012, *Phys. Rev. Lett.* 109, 231301.
24. N. Battaglia, J. R. Bond, **C. Pfrommer**, J. L. Sievers, *On the cluster physics of Sunyaev-Zel'dovich and X-ray surveys I: the influence of feedback, non-thermal pressure and cluster shapes on $Y - M$ scaling relations*, 2012, *ApJ*, 758, 74.
25. N. Battaglia, J. R. Bond, **C. Pfrommer**, J. L. Sievers, *On the cluster physics of Sunyaev-Zel'dovich and X-ray surveys II: deconstructing the thermal SZ power spectrum*, 2012, *ApJ*, 758, 75.
26. The VERITAS Collaboration: T. Arlen et al., incl. **C. Pfrommer (corresponding author)**, *Constraints on cosmic rays, magnetic fields, and dark matter from gamma-ray observations of the Coma cluster of galaxies with VERITAS and Fermi*, 2012, *ApJ*, 757, 123.

27. M. Uhlig, **C. Pfrommer**, M. Sharma, B. Nath, T. A. Enßlin, V. Springel, *Galactic winds driven by cosmic-ray streaming*, 2012, *MNRAS*, 423, 2374.
28. E. Puchwein, **C. Pfrommer**, V. Springel, A. E. Broderick, P. Chang, *The Lyman- α forest in a blazar-heated Universe*, 2012, *MNRAS*, 423, 149.
29. A. E. Broderick, P. Chang, **C. Pfrommer**, *The cosmological impact of luminous TeV blazars I: implications of plasma instabilities for the intergalactic magnetic field and extragalactic gamma-ray background*, 2012, *ApJ*, 752, 22.
30. P. Chang, A. E. Broderick, **C. Pfrommer**, *The cosmological impact of luminous TeV blazars II: rewriting the thermal history of the intergalactic medium*, 2012, *ApJ*, 752, 23.
31. **C. Pfrommer**, P. Chang, A. E. Broderick, *The cosmological impact of luminous TeV blazars III: implications for galaxy clusters and the formation of dwarf galaxies*, 2012, *ApJ*, 752, 24.
32. The MAGIC Collaboration: J. Aleksic et al., incl. **C. Pfrommer (corresponding author)**, *Constraining cosmic rays and magnetic fields in the Perseus galaxy cluster with TeV observations by the MAGIC telescopes*, 2012, *A&A*, 541, A99.
33. The MAGIC Collaboration: J. Aleksic et al., incl. **C. Pfrommer**, *Detection of very high energy gamma-ray emission from NGC 1275 by the MAGIC telescopes*, 2012, *A&A*, 539, L2.
34. A. Pinzke, **C. Pfrommer**, L. Bergström, *Prospects of detecting gamma-ray emission from galaxy clusters: cosmic rays and dark matter annihilations*, 2011, *Phys. Rev. D* 84, 123509.
35. F. Vazza, K. Dolag, D. Ryu, G. Brunetti, C. Gheller, H. Kang, **C. Pfrommer**, *A comparison of cosmological codes: properties of thermal gas and shock waves in large scale structures*, 2011, *MNRAS*, 418, 960.
36. **C. Pfrommer** & T. W. Jones, *Radio galaxy NGC 1265 unveils the accretion shock onto the Perseus galaxy cluster*, 2011, *ApJ*, 730, 22.
37. T. A. Enßlin, **C. Pfrommer**, F. Miniati, K. Subramanian, *Cosmic ray transport in galaxy clusters: implications for radio halos, gamma-ray signatures, and cool core heating*, 2011, *A&A*, 527, 99.
38. A. J. Cuesta, T. E. Jeltema, F. Zandanel, S. Profumo, F. Prada, G. Yepes, A. Klypin, Y. Hoffman, J. Primack, M. A. Sanchez-Conde, **C. Pfrommer**, *Dark matter decay and annihilation in the Local Universe: CLUES from Fermi*, 2011, *ApJL*, 726, L6.
39. **C. Pfrommer** & L. J. Dursi, *Detecting the orientation of magnetic fields in galaxy clusters*, 2010, *Nature Phys.*, 6, 520.
40. The MAGIC Collaboration: J. Aleksic et al., incl. **C. Pfrommer**, *Detection of very high energy gamma-ray emission from the Perseus cluster head-tail galaxy IC 310 by the MAGIC telescopes*, 2010, *ApJL*, 723, L207.
41. The Fermi/LAT Collaboration: M. Ackermann et al., incl. **C. Pfrommer**, *GeV gamma-ray flux upper limits from clusters of galaxies*, 2010, *ApJL*, 717, L71.

42. N. Battaglia, J. R. Bond, **C. Pfrommer**, J. L. Sievers, D. Sijacki, *Simulations of the Sunyaev-Zel'dovich power spectrum with active galactic nucleus feedback*, 2010, *ApJ*, 725, 91.
43. A. Pinzke & **C. Pfrommer**, *Simulating the gamma-ray emission from galaxy clusters: a universal cosmic ray spectrum and spatial distribution*, 2010, *MNRAS*, 409, 449.
44. The MAGIC Collaboration: J. Aleksic et al., incl. **C. Pfrommer (corresponding author)**, *MAGIC gamma-ray observation of the Perseus galaxy cluster: implications for cosmic rays, dark matter and NGC1275*, 2010, *ApJ*, 710, 634.
45. A. Pinzke, **C. Pfrommer**, L. Bergström, *Gamma-rays from dark matter annihilations strongly constrain the substructure in halos*, 2009, *Phys. Rev. Lett.*, 103, 181302.
46. N. Battaglia, **C. Pfrommer**, J. L. Sievers, J. R. Bond, T. A. Enßlin, *Exploring the magnetized cosmic web through low frequency radio emission*, 2009, *MNRAS*, 393, 1073.
47. D. Sijacki, **C. Pfrommer**, T. A. Enßlin, V. Springel, *Simulations of cosmic ray feedback by AGN in galaxy clusters*, 2008, *MNRAS*, 387, 1403.
48. **C. Pfrommer**, *Simulating cosmic rays in clusters of galaxies – III. Non-thermal scaling relations and comparison to observations*, 2008, *MNRAS*, 385, 1242.
49. **C. Pfrommer**, T. A. Enßlin, V. Springel, *Simulating cosmic rays in clusters of galaxies – II. A unified scheme for radio halos and relics with predictions of the gamma-ray emission*, 2008, *MNRAS*, 385, 1211.
50. J. L. Dursi & **C. Pfrommer**, *Draping of cluster magnetic fields over bullets and bubbles—morphology and dynamic effects*, 2008, *ApJ*, 677, 993.
51. M. Jubelgas, V. Springel, T. A. Enßlin, **C. Pfrommer**, *Cosmic ray feedback in hydrodynamical simulations of galaxy formation*, 2008, *A&A*, 481, 33.
52. M. Ruszkowski, T. A. Enßlin, M. Brüggen, S. Heinz, **C. Pfrommer**, *Impact of magnetic fields on AGN-blown bubbles*, 2007, *MNRAS*, 378, 662.
53. **C. Pfrommer**, T. A. Enßlin, V. Springel, M. Jubelgas, K. Dolag, *Simulating cosmic rays in clusters of galaxies – I. effects on the Sunyaev-Zel'dovich effect and the X-ray emission*, 2007, *MNRAS*, 378, 385.
54. T. A. Enßlin, **C. Pfrommer**, V. Springel, M. Jubelgas, *Cosmic ray physics in calculations of cosmological structure formation*, 2007, *A&A*, 473, 41.
55. **C. Pfrommer**, V. Springel, T. A. Enßlin, M. Jubelgas, *Detecting shock waves in cosmological smoothed particle hydrodynamics simulations*, 2006, *MNRAS*, 367, 113.
56. B. M. Schäfer, **C. Pfrommer**, M. Bartelmann, V. Springel, L. Hernquist, *Detecting Sunyaev-Zel'dovich clusters with Planck – I. Construction of all-sky thermal and kinetic SZ-maps*, 2006, *MNRAS*, 370, 1309.
57. B. M. Schäfer, **C. Pfrommer**, R. Hell, M. Bartelmann, *Detecting Sunyaev-Zel'dovich clusters with Planck – II. Foreground components and optimised filtering schemes*, 2006, *MNRAS*, 370, 1713.

58. I. Golombek, M. Bartelmann, T. A. Enßlin, M. Jubelgas, **C. Pfrommer**, V. Springel, *Radio emission of galaxy clusters*, 2006, *AN*, 327, 569.
59. **C. Pfrommer**, T. A. Enßlin, C. Sarazin, *Unveiling the composition of radio plasma bubbles in galaxy clusters with the Sunyaev-Zel'dovich effect*, 2005, *A&A*, 430, 799.
60. B. M. Schäfer, **C. Pfrommer**, S. Zaroubi, *Redshift estimation of clusters by wavelet decomposition of their Sunyaev-Zel'dovich morphology*, 2005, *MNRAS*, 362, 1418.
61. T. Hamana, M. Bartelmann, N. Yoshida, **C. Pfrommer**, *Statistical distribution of gravitational-lensing excursion angles: Winding ways to us from the deep universe*, 2005, *MNRAS*, 356, 829.
62. **C. Pfrommer** & T. A. Enßlin, *Estimating galaxy cluster magnetic fields by the classical and hadronic minimum energy criterion*, 2004, *MNRAS*, 352, 76.
63. **C. Pfrommer** & T. A. Enßlin, *The quest for cosmic ray protons in clusters of galaxies*, 2004, *JKAS*, 37, 455.
64. **C. Pfrommer** & T. A. Enßlin, *Constraining the population of cosmic ray protons in cooling flow clusters with gamma-ray and radio observations: Are radio mini-halos of hadronic origin?*, 2004, *A&A*, 413, 17.
65. **C. Pfrommer** & T. A. Enßlin, *Probing the cosmic ray population of the giant elliptical galaxy M 87 with observed TeV gamma-rays*, 2003, *A&A*, 407, L73.

SUBMITTED
PUBLICATIONS

1. J. Wiener, **C. Pfrommer**, S. P. Oh, *Cosmic ray-driven galactic winds: streaming or diffusion?*, 2016, submitted.
2. P. Chang, A. E. Broderick, **C. Pfrommer**, E. Puchwein, A. Lamberts, M. Shalaby, *The Linear Instability of Dilute Ultrarelativistic e^\pm Pair Beams*, 2016, submitted.
3. **C. Pfrommer**, R. Pakmor, K. Schaal, C. Simpson, V. Springel, *Simulating cosmic ray physics on a moving mesh*, 2016, submitted, arXiv:1604.07399.
4. A. Pinzke, S. P. Oh, **C. Pfrommer**, *Turbulence and particle acceleration in giant radio halos: the origin of seed electrons*, 2015, submitted, arXiv:1503.07870.

CONTRIBUTED
PUBLICATIONS

1. **C. Pfrommer**, *Introduction to extragalactic sources of very high-energy photons*. In *Rencontres de Moriond: Very High Energy Phenomena in the Universe*, 2013, conference held at La Thuile, Italy, arXiv:1308.6582.
2. **C. Pfrommer**, A. E. Broderick, P. Chang, E. Puchwein, V. Springel, *The physics and cosmology of TeV blazars in a nutshell*. In *Rencontres de Moriond: Very High Energy Phenomena in the Universe*, 2013, conference held at La Thuile, Italy, arXiv:1308.6284.
3. **C. Pfrommer**, T. A. Enßlin, F. Miniati, K. Subramanian, *Cosmic ray transport in galaxy clusters: implications for radio halos and gamma-rays*, Proceedings of a conference in Nice, 15-18 November 2010; published in *MmSAI*, 82, 598 (2011).
4. T. E. Clarke, T. A. Enßlin, A. Finoguenov, H. Intema, **C. Pfrommer**, R. van Weeren, H. Röttgering, R. Oonk, *The Curious Case of Abell 2256*, Proceedings of a conference in Nice, 15-18 November 2010; published in *MmSAI*, 82, 547 (2011).
5. S. Lombardi et al. (for the MAGIC Collaboration), **C. Pfrommer**, A. Pinzke, *Observation of the Perseus cluster of galaxies with the MAGIC telescopes*, 2011 Fermi Symposium proceedings, arXiv:1111.0143.
6. D. Hildebrand et al. (for the MAGIC Collaboration), **C. Pfrommer**, A. Pinzke, *MAGIC detection of VHE Gamma-ray emission from NGC 1275 and IC 310*, 2011, Proc. of the 32nd Int'l Cosmic Ray Conference, Beijing, China, arXiv:1110.5358.
7. S. Lombardi et al. (for the MAGIC Collaboration), **C. Pfrommer**, A. Pinzke, *Observation of the Perseus galaxy cluster with the MAGIC telescopes*, 2011, Proc. of the 32nd Int'l Cosmic Ray Conference, Beijing, China, arXiv:1109.6216.
8. S. T. Myers, **C. Pfrommer**, et al., *Galaxy Cluster Astrophysics and Cosmology: Questions and Opportunities for the Coming Decade*, Astro2010: The Astronomy and Astrophysics Decadal Survey, Science White Papers, no. 218, arXiv:0903.0401.
9. L. Rudnick et al. (including **C. Pfrommer**), *Clusters and Large-Scale Structure: the Synchrotron Keys*, Astro2010: The Astronomy and Astrophysics Decadal Survey, Science White Papers, no. 253, arXiv:0903.0824.
10. S. R. Golwala et al. (including **C. Pfrommer**), *Calibrating Galaxy Clusters as a Tool for Cosmology via Studies of the Intracluster Medium*, Astro2010: The Astronomy and Astrophysics Decadal Survey, Science White Papers, no. 96.
11. **C. Pfrommer**, V. Springel, M. Jubelgas, T. A. Enßlin, *Cosmic ray feedback in hydrodynamical simulations of galaxy and galaxy cluster formation*. In *Cosmic Frontiers*, 2006, conference held at Durham University, UK, astro-ph/0611084.
12. **C. Pfrommer**, V. Springel, T. A. Enßlin, M. Jubelgas, *Cosmological structure formation shocks and cosmic rays in hydrodynamical simulations*. In *Heating vs. Cooling in Galaxies and Clusters of Galaxies*, 2006, conference held at Garching, Germany, astro-ph/0611085.
13. T. A. Enßlin & **C. Pfrommer**, *Particle acceleration processes in the cosmic large-scale structure*. In *Highlights of Astronomy, Volume 14*, 2006, proceedings of the XXVIth IAU General Assembly, Prague, Czech Republic.

14. **C. Pfrommer**, V. Springel, T. A. Enßlin, M. Jubelgas, *Detecting shock waves in smoothed particle hydrodynamics simulations*. In *Rencontres de Moriond: Contents and Structures of the Universe*, 2006, conference held at La Thuile, Italy.
15. T. A. Enßlin, M. Jubelgas, **C. Pfrommer**, V. Springel, *Cosmic ray physics in calculations of cosmological structure formation*, 2006. In *Rencontres de Moriond: Contents and Structures of the Universe*, 2006, conference held at La Thuile, Italy.
16. T. A. Enßlin, C. Vogt, **C. Pfrommer**, *Magnetic fields in clusters of galaxies*. In *The Magnetized Plasma in Galaxy Evolution*, 2004, conference held in Krakow, Poland, astro-ph/0501338.
17. T. A. Enßlin, C. Vogt, **C. Pfrommer**, *Magnetic fields and cosmic rays in cooling flows*. In *The Riddle of Cooling Flows in Galaxies and Clusters of Galaxies*, 2003, conference held in Charlottesville, VA, USA, astro-ph/0310028.