Christoph Pfrommer

List of Publications by Year
in descending order

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114 papers	6,571 citations	53794 45 h-index	69250 77 g-index
115 all docs	115 docs citations	115 times ranked	3813 citing authors

#	Article	IF	Citations
1	Constraining the population of cosmic ray protons in cooling flow clusters withÎ³-ray and radio observations: Are radio mini-halos of hadronic origin?. Astronomy and Astrophysics, 2004, 413, 17-36.	5.1	224
2	Detecting shock waves in cosmological smoothed particle hydrodynamics simulations. Monthly Notices of the Royal Astronomical Society, 2006, 367, 113-131.	4.4	214
3	Draping of Cluster Magnetic Fields over Bullets and Bubblesâ€"Morphology and Dynamic Effects. Astrophysical Journal, 2008, 677, 993-1018.	4.5	200
4	THE COSMOLOGICAL IMPACT OF LUMINOUS TeV BLAZARS. I. IMPLICATIONS OF PLASMA INSTABILITIES FOR THE INTERGALACTIC MAGNETIC FIELD AND EXTRAGALACTIC GAMMA-RAY BACKGROUND. Astrophysical Journal, 2012, 752, 22.	4.5	196
5	Is Dark Matter with Long-Range Interactions a Solution to All Small-Scale Problems of<mml:math xmlns:mml="http://www.w3.org/1998/Math/MathML" display="inline"><mml:mi>Î›</mml:mi></mml:math>Cold Dark Matter Cosmology?. Physical Review Letters, 2012, 109, 231301.	7.8	196
6	Galactic winds driven by cosmic ray streaming. Monthly Notices of the Royal Astronomical Society, 2012, 423, 2374-2396.	4.4	189
7	ETHOS â€“ an effective theory of structure formation: dark matter physics as a possible explanation of the small-scale CDM problems. Monthly Notices of the Royal Astronomical Society, 2016, 460, 1399-1416.	4.4	185
8	ON THE CLUSTER PHYSICS OF SUNYAEV-ZEL'DOVICH AND X-RAY SURVEYS. I. THE INFLUENCE OF FEEDBACK, NON-THERMAL PRESSURE, AND CLUSTER SHAPES ONY-MSCALING RELATIONS. Astrophysical Journal, 2012, 758, 74.	4.5	179
9	SIMULATIONS OF THE SUNYAEV-ZEL'DOVICH POWER SPECTRUM WITH ACTIVE GALACTIC NUCLEUS FEEDBACK. Astrophysical Journal, 2010, 725, 91-99.	4.5	171
10	ON THE CLUSTER PHYSICS OF SUNYAEV-ZEL'DOVICH AND X-RAY SURVEYS. II. DECONSTRUCTING THE THERMAL SZ POWER SPECTRUM. Astrophysical Journal, 2012, 758, 75.	4.5	163
11	ETHOSâ€"an effective theory of structure formation: From dark particle physics to the matter distribution of the Universe. Physical Review D, 2016, 93, .	4.7	155
12	Cosmic ray feedback in hydrodynamical simulations of galaxy formation. Astronomy and Astrophysics, 2008, 481, 33-63.	5.1	155
13	Cosmic ray transport in galaxy clusters: implications for radio halos, gamma-ray signatures, and cool core heating. Astronomy and Astrophysics, 2011, 527, A99.	5.1	150
14	Simulating cosmic ray physics on a moving mesh. Monthly Notices of the Royal Astronomical Society, 2017, 465, 4500-4529.	4.4	137
15	Simulating cosmic rays in clusters of galaxies â€“ II. A unified scheme for radio haloes and relics with predictions of the Î³-ray emission. Monthly Notices of the Royal Astronomical Society, 2008, 385, 1211-1241.	4.4	133
16	Giant radio relics in galaxy clusters: reacceleration of fossil relativistic electrons?. Monthly Notices of the Royal Astronomical Society, 2013, 435, 1061-1082.	4.4	129
17	GALACTIC WINDS DRIVEN BY ISOTROPIC AND ANISOTROPIC COSMIC-RAY DIFFUSION IN DISK GALAXIES. Astrophysical Journal Letters, 2016, 824, L30.	8.3	122
18	Magnetic field formation in the Milky Way like disc galaxies of the Auriga project. Monthly Notices of the Royal Astronomical Society, 2017, 469, 3185-3199.	4.4	120

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19	Simulating cosmic rays in clusters of galaxies - I. Effects on the Sunyaev-Zel'dovich effect and the X-ray emission. Monthly Notices of the Royal Astronomical Society, 2007, 378, 385-408.	4.4	119
20	Impact of tangled magnetic fields on fossil radio bubbles. Monthly Notices of the Royal Astronomical Society, 2007, 378, 662-672.	4.4	113
21	THE ROLE OF COSMIC-RAY PRESSURE IN ACCELERATING GALACTIC OUTFLOWS. Astrophysical Journal Letters, 2016, 827, L29.	8.3	113
22	Cosmic ray physics in calculations of cosmological structure formation. Astronomy and Astrophysics, 2007, 473, 41-57.	5.1	102
23	Simulations of cosmic-ray feedback by active galactic nuclei in galaxy clusters. Monthly Notices of the Royal Astronomical Society, 2008, 387, 1403-1415.	4.4	92
24	CONSTRAINTS ON COSMIC RAYS, MAGNETIC FIELDS, AND DARK MATTER FROM GAMMA-RAY OBSERVATIONS OF THE COMA CLUSTER OF GALAXIES WITH VERITAS ANDFERMI. Astrophysical Journal, 2012, 757, 123.	4.5	92
25	Simulating theâ€Î³-ray emission from galaxy clusters: a universal cosmic ray spectrum and spatial distribution. Monthly Notices of the Royal Astronomical Society, 2010, 409, 449-480.	4.4	89
26	TOWARD A COMPREHENSIVE MODEL FOR FEEDBACK BY ACTIVE GALACTIC NUCLEI: NEW INSIGHTS FROM M87 OBSERVATIONS BY LOFAR,FERMI, AND H.E.S.S.. Astrophysical Journal, 2013, 779, 10.	4.5	79
27	ON THE CLUSTER PHYSICS OF SUNYAEV-ZEL'DOVICH AND X-RAY SURVEYS. III. MEASUREMENT BIASES AND COSMOLOGICAL EVOLUTION OF GAS AND STELLAR MASS FRACTIONS. Astrophysical Journal, 2013, 777, 123.	4.5	77
28	Cosmic ray-driven galactic winds: streaming or diffusion?. Monthly Notices of the Royal Astronomical Society, 0, , stx127.	4.4	77
29	Simulating the interaction of jets with the intracluster medium. Monthly Notices of the Royal Astronomical Society, 2017, 470, 4530-4546.	4.4	74
30	Cosmic-ray hydrodynamics: AlfvÃ©n-wave regulated transport of cosmic rays. Monthly Notices of the Royal Astronomical Society, 2019, 485, 2977-3008.	4.4	74
31	Turbulence and particle acceleration in giant radio haloes: the origin of seed electrons. Monthly Notices of the Royal Astronomical Society, 2017, 465, 4800-4816.	4.4	73
32	Interaction of a cold cloud with a hot wind: the regimes of cloud growth and destruction and the impact of magnetic fields. Monthly Notices of the Royal Astronomical Society, 2020, 499, 4261-4281.	4.4	72
33	The physics of multiphase gas flows: fragmentation of a radiatively cooling gas cloud in a hot wind. Monthly Notices of the Royal Astronomical Society, 2019, 482, 5401-5421.	4.4	69
34	THE COSMOLOGICAL IMPACT OF LUMINOUS TeV BLAZARS. II. REWRITING THE THERMAL HISTORY OF THE INTERGALACTIC MEDIUM. Astrophysical Journal, 2012, 752, 23.	4.5	68
35	Simulations of the dynamics of magnetized jets and cosmic rays in galaxy clusters. Monthly Notices of the Royal Astronomical Society, 2018, 481, 2878-2900.	4.4	67
36	The Lyman Î± forest in a blazar-heated Universe. Monthly Notices of the Royal Astronomical Society, 2012, 423, 149-164.	4.4	66

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37	The dependence of cosmic ray-driven galactic winds on halo mass. Monthly Notices of the Royal Astronomical Society, 2018, 475, 570-584.	4.4	65
38	The effects of cosmic rays on the formation of Milky Way-mass galaxies in a cosmological context. Monthly Notices of the Royal Astronomical Society, 2020, 497, 1712-1737.	4.4	64
39	Constraining cosmic rays and magnetic fields in the Perseus galaxy cluster with TeV observations by the MAGIC telescopes. Astronomy and Astrophysics, 2012, 541, A99.	5.1	64
40	Detecting the orientation of magnetic fields in galaxy clusters. Nature Physics, 2010, 6, 520-526.	16.7	61
41	On the physics of radio haloes in galaxy clusters: scaling relations and luminosity functions. Monthly Notices of the Royal Astronomical Society, 2014, 438, 124-144.	4.4	57
42	Estimating galaxy cluster magnetic fields by the classical and hadronic minimum energy criterion. Monthly Notices of the Royal Astronomical Society, 2004, 352, 76-90.	4.4	56
43	THE COSMOLOGICAL IMPACT OF LUMINOUS TeV BLAZARS. III. IMPLICATIONS FOR GALAXY CLUSTERS AND THE FORMATION OF DWARF GALAXIES. Astrophysical Journal, 2012, 752, 24.	4.5	56
44	The <scp>hestia</scp> project: simulations of the Local Group. Monthly Notices of the Royal Astronomical Society, 2020, 498, 2968-2983.	4.4	56
45	Semi-implicit anisotropic cosmic ray transport on an unstructured moving mesh. Monthly Notices of the Royal Astronomical Society, 2016, 462, 2603-2616.	4.4	51
46	IMAGINE: a comprehensive view of the interstellar medium, Galactic magnetic fields and cosmic rays. Journal of Cosmology and Astroparticle Physics, 2018, 2018, 049-049.	5.4	49
47	Simulating Gamma-Ray Emission in Star-forming Galaxies. Astrophysical Journal Letters, 2017, 847, L13.	8.3	45
48	Unveiling the composition of radio plasma bubbles in galaxy clusters with the Sunyaev-Zel'dovich effect. Astronomy and Astrophysics, 2005, 430, 799-810.	5.1	45
49	Faraday rotation maps of disc galaxies. Monthly Notices of the Royal Astronomical Society, 2018, 481, 4410-4418.	4.4	44
50	Exploring the magnetized cosmic web through low-frequency radio emission. Monthly Notices of the Royal Astronomical Society, 2009, 393, 1073-1089.	4.4	43
51	Deep observation of the NGCâ€‰1275 region with MAGIC: search of diffuseÎ³-ray emission from cosmic rays in the Perseus cluster. Astronomy and Astrophysics, 2016, 589, A33.	5.1	40
52	Increasing Black Hole Feedback-induced Quenching with Anisotropic Thermal Conduction. Astrophysical Journal Letters, 2017, 837, L18.	8.3	40
53	Magnetizing the circumgalactic medium of disc galaxies. Monthly Notices of the Royal Astronomical Society, 2020, 498, 3125-3137.	4.4	40
54	Cosmic ray heating in cool core clusters I: diversity of steady state solutions. Monthly Notices of the Royal Astronomical Society, 0, , stx131.	4.4	39

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55	THE EFFECT OF NONLINEAR LANDAU DAMPING ON ULTRARELATIVISTIC BEAM PLASMA INSTABILITIES. Astrophysical Journal, 2014, 797, 110.	4.5	38
56	Highly ordered magnetic fields in the tail of the jellyfish galaxy JO206. Nature Astronomy, 2021, 5, 159-168.	10.1	38
57	RADIO GALAXY NGC 1265 UNVEILS THE ACCRETION SHOCK ONTO THE PERSEUS GALAXY CLUSTER. Astrophysical Journal, 2011, 730, 22.	4.5	37
58	Missing Gamma-Ray Halos and the Need for New Physics in the Gamma-Ray Sky. Astrophysical Journal, 2018, 868, 87.	4.5	35
59	Cosmic ray heating in cool core clusters II: Self-regulation cycle and non-thermal emission. Monthly Notices of the Royal Astronomical Society, 0, , stx132.	4.4	34
60	Evolution of cosmic ray electron spectra in magnetohydrodynamical simulations. Monthly Notices of the Royal Astronomical Society, 2019, 488, 2235-2252.	4.4	34
61	Probing Cosmic-Ray Transport with Radio Synchrotron Harps in the Galactic Center. Astrophysical Journal Letters, 2020, 890, L18.	8.3	34
62	Measuring the thermal Sunyaev-Zel'dovich effect through the cross correlation of Planck and WMAP maps with ROSAT galaxy cluster catalogs. Journal of Cosmology and Astroparticle Physics, 2013, 2013, 064-064.	5.4	32
63	The impact of magnetic fields on cold streams feeding galaxies. Monthly Notices of the Royal Astronomical Society, 2019, 489, 3368-3384.	4.4	32
64	Spectrally resolved cosmic rays â€“ II. Momentum-dependent cosmic ray diffusion drives powerful galactic winds. Monthly Notices of the Royal Astronomical Society, 2022, 510, 3917-3938.	4.4	30
65	Importance of Resolving the Spectral Support of Beam-plasma Instabilities in Simulations. Astrophysical Journal, 2017, 848, 81.	4.5	29
66	SHARP: A Spatially Higher-order, Relativistic Particle-in-cell Code. Astrophysical Journal, 2017, 841, 52.	4.5	28
67	Spectrally resolved cosmic ray hydrodynamics â€“ I. Spectral scheme. Monthly Notices of the Royal Astronomical Society, 0, , .	4.4	28
68	The effect of cosmic ray acceleration on supernova blast wave dynamics. Monthly Notices of the Royal Astronomical Society, 2018, 478, 5278-5295.	4.4	27
69	ON THE CLUSTER PHYSICS OF SUNYAEVâ€“ZELâ€™DOVICH AND X-RAY SURVEYS. IV. CHARACTERIZING DENSITY AND PRESSURE CLUMPING DUE TO INFALLING SUBSTRUCTURES. Astrophysical Journal, 2015, 806, 43.	4.5	26
70	Cosmic rays and non-thermal emission in simulated galaxies â€“ II. Î³-ray maps, spectra, and the far-infraredâ€“Î³-ray relation. Monthly Notices of the Royal Astronomical Society, 2021, 505, 3295-3313.	4.4	26
71	Cosmic rays and non-thermal emission in simulated galaxies â€“ III. Probing cosmic-ray calorimetry with radio spectra and the FIRâ€“radio correlation. Monthly Notices of the Royal Astronomical Society, 2021, 508, 4072-4095.	4.4	25
72	Shock finding on a moving-mesh â€“ II. Hydrodynamic shocks in the Illustris universe. Monthly Notices of the Royal Astronomical Society, 2016, 461, 4441-4465.	4.4	24

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73	The challenge of simultaneously matching the observed diversity of chemical abundance patterns in cosmological hydrodynamical simulations. Monthly Notices of the Royal Astronomical Society, 2021, 508, 3365-3387.	4.4	24
74	IMPLICATIONS OF PLASMA BEAM INSTABILITIES FOR THE STATISTICS OF THEFERMIHARD GAMMA-RAY BLAZARS AND THE ORIGIN OF THE EXTRAGALACTIC GAMMA-RAY BACKGROUND. Astrophysical Journal, 2014, 790, 137.	4.5	23
75	ETHOS â€“ an Effective Theory of Structure Formation: detecting dark matter interactions through the Lyman-Î± forest. Monthly Notices of the Royal Astronomical Society, 2019, 487, 522-536.	4.4	23
76	On the Kelvinâ€“Helmholtz instability with smooth initial conditions â€“ linear theory and simulations. Monthly Notices of the Royal Astronomical Society, 2019, 485, 908-923.	4.4	23
77	Cosmic rays and non-thermal emission in simulated galaxies â^' I. Electron and proton spectra compared to Voyager-1 data. Monthly Notices of the Royal Astronomical Society, 2021, 505, 3273-3294.	4.4	23
78	Enhancing AGN efficiency and cool-core formation with anisotropic thermal conduction. Monthly Notices of the Royal Astronomical Society, 2019, 488, 3003-3013.	4.4	22
79	Non-Kolmogorov turbulence in multiphase intracluster medium driven by cold gas precipitation and AGN jets. Monthly Notices of the Royal Astronomical Society, 2021, 504, 898-909.	4.4	21
80	ETHOS â€“ an effective parametrization and classification for structure formation: the non-linear regime at z â‰³ 5. Monthly Notices of the Royal Astronomical Society, 2020, 498, 3403-3419.	4.4	20
81	A finite volume method for two-moment cosmic ray hydrodynamics on a moving mesh. Monthly Notices of the Royal Astronomical Society, 2021, 503, 2242-2264.	4.4	20
82	LOWER LIMITS ON THE ANISOTROPY OF THE EXTRAGALACTIC GAMMA-RAY BACKGROUND IMPLIED BY THE 2FGL AND 1FHL CATALOGS. Astrophysical Journal, 2014, 796, 12.	4.5	19
83	PATCHY BLAZAR HEATING: DIVERSIFYING THE THERMAL HISTORY OF THE INTERGALACTIC MEDIUM. Astrophysical Journal, 2015, 811, 19.	4.5	19
84	THE LINEAR INSTABILITY OF DILUTE ULTRARELATIVISTIC e^{Â±} PAIR BEAMS. Astrophysical Journal, 2016, 833, 118.	4.5	19
85	Whistler-regulated Magnetohydrodynamics: Transport Equations for Electron Thermal Conduction in the High-I² Intracluster Medium of Galaxy Clusters. Astrophysical Journal, 2021, 923, 245.	4.5	19
86	Simulating radio synchrotron emission in star-forming galaxies: small-scale magnetic dynamo and the origin of the far-infraredâ€“radio correlation. Monthly Notices of the Royal Astronomical Society, 2022, 515, 4229-4264.	4.4	19
87	Growth of Beamâ€“Plasma Instabilities in the Presence of Background Inhomogeneity. Astrophysical Journal, 2018, 859, 45.	4.5	18
88	Gas flows in galaxy mergers: supersonic turbulence in bridges, accretion from the circumgalactic medium, and metallicity dilution. Monthly Notices of the Royal Astronomical Society, 2021, 509, 2720-2735.	4.4	18
89	Evolution and observational signatures of the cosmic ray electron spectrum in SNÂ1006. Monthly Notices of the Royal Astronomical Society, 2020, 499, 2785-2802.	4.4	17
90	A New Cosmic-Ray-driven Instability. Astrophysical Journal, 2021, 908, 206.	4.5	17

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91	The impact of magnetic fields on cosmological galaxy mergers â€“ I. Reshaping gas and stellar discs. Monthly Notices of the Royal Astronomical Society, 2021, 506, 229-255.	4.4	14
92	Two striking headâ€“tail galaxies in the galaxy cluster IIZW108: insights into transition to turbulence, magnetic fields, and particle re-acceleration. Monthly Notices of the Royal Astronomical Society, 2021, 508, 5326-5344.	4.4	14
93	BOW TIES IN THE SKY. I. THE ANGULAR STRUCTURE OF INVERSE COMPTON GAMMA-RAY HALOS IN THE FERMI SKY. Astrophysical Journal, 2016, 832, 109.	4.5	13
94	The Sunyaevâ€“Zelâ€™dovich Effect of Simulated Jet-inflated Bubbles in Clusters. Astrophysical Journal Letters, 2019, 872, L8.	8.3	13
95	The growth of the longitudinal beamâ€“plasma instability in the presence of an inhomogeneous background. Journal of Plasma Physics, 2020, 86, .	2.1	13
96	Connecting turbulent velocities and magnetic fields in galaxy cluster simulations with active galactic nuclei jets. Monthly Notices of the Royal Astronomical Society, 2021, 503, 1327-1344.	4.4	13
97	Constraining the coherence scale of the interstellar magnetic field using TeV gamma-ray observations of supernova remnants. Monthly Notices of the Royal Astronomical Society, 2020, 496, 2448-2461.	4.4	11
98	Simulating TeV gamma-ray morphologies of shell-type supernova remnants. Monthly Notices of the Royal Astronomical Society, 2020, 498, 5557-5573.	4.4	10
99	Braginskii viscosity on an unstructured, moving mesh accelerated with super-time-stepping. Monthly Notices of the Royal Astronomical Society, 2020, 491, 2919-2938.	4.4	10
100	Bow Ties in the Sky. II. Searching for Gamma-Ray Halos in the Fermi Sky Using Anisotropy. Astrophysical Journal, 2017, 850, 157.	4.5	9
101	Suppressed heat conductivity in the intracluster medium: implications for the magneto-thermal instability. Monthly Notices of the Royal Astronomical Society, 2021, 504, 3435-3454.	4.4	9
102	MERGHERS pilot: MeerKAT discovery of diffuse emission in nine massive Sunyaevâ€“Zelâ€™dovich-selected galaxy clusters from ACT. Monthly Notices of the Royal Astronomical Society, 2021, 504, 1749-1758.	4.4	9
103	Comparing different closure relations for cosmic ray hydrodynamics. Monthly Notices of the Royal Astronomical Society, 2021, 509, 4803-4816.	4.4	9
104	Turning AGN Bubbles into Radio Relics with Sloshing: Modeling CR Transport with Realistic Physics. Galaxies, 2021, 9, 91.	3.0	9
105	Cold and hot gas distribution around the Milky-Way â€“ M31 system in the HESTIA simulations. Monthly Notices of the Royal Astronomical Society, 2022, 512, 3717-3737.	4.4	9
106	The Mechanism of Efficient Electron Acceleration at Parallel Nonrelativistic Shocks. Astrophysical Journal, 2022, 932, 86.	4.5	9
107	Constraints on the Intergalactic Magnetic Field from Bow Ties in the Gamma-Ray Sky. Astrophysical Journal, 2020, 892, 123.	4.5	5
108	Cosmic ray feedback in galaxies and active galactic nuclei. AIP Conference Proceedings, 2017, , .	0.4	2

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109	A Multiwavelength Dynamical State Analysis of ACT-CL J0019.6+0336. Galaxies, 2021, 9, 97.	3.0	2
110	Escaping the maze: a statistical subgrid model for cloud-scale density structures in the interstellar medium. Monthly Notices of the Royal Astronomical Society, 2022, 513, 1414-1428.	4.4	2
111	MERGHERS: An SZ-selected cluster survey with MeerKAT. , 2018, , .		1
112	Constraining blazar heating with the 2 â‰²zâ‰² 3 Lyman-Î± forest. Monthly Notices of the Royal Astronomical Society, 2022, 512, 3045-3059.	4.4	1
113	Particle acceleration processes in the cosmic large-scale structure. Proceedings of the International Astronomical Union, 2006, 2, 372-373.	0.0	0
114	Radio emission of galaxy clusters. Astronomische Nachrichten, 2006, 327, 569-570.	1.2	0