

Torsten A EnÅlin

List of Publications by Year in descending order

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83
papers

2,016
citations

218677

26
h-index

254184

43
g-index

87
all docs

87
docs citations

87
times ranked

2301
citing authors

#	ARTICLE	IF	CITATIONS
1	Ultra-high energy cosmic ray probes of large scale structure and magnetic fields. <i>Physical Review D</i> , 2004, 70, .	4.7	144
2	Simulating cosmic rays in clusters of galaxies – II. A unified scheme for radio haloes and relics with predictions of the γ -ray emission. <i>Monthly Notices of the Royal Astronomical Society</i> , 2008, 385, 1211-1241.	4.4	133
3	Magnetic field seeding by galactic winds. <i>Monthly Notices of the Royal Astronomical Society</i> , 2006, 370, 319-330.	4.4	104
4	Information field theory for cosmological perturbation reconstruction and nonlinear signal analysis. <i>Physical Review D</i> , 2009, 80, .	4.7	104
5	Evidence for shock acceleration and intergalactic magnetic fields in a large-scale filament of galaxies ZwCl 2341.1+0000. <i>New Astronomy</i> , 2002, 7, 249-277.	1.8	99
6	Bayesian power-spectrum inference for large-scale structure data. <i>Monthly Notices of the Royal Astronomical Society</i> , 2010, 406, 60-85.	4.4	93
7	Simulations of cosmic-ray feedback by active galactic nuclei in galaxy clusters. <i>Monthly Notices of the Royal Astronomical Society</i> , 2008, 387, 1403-1415.	4.4	92
8	Bayesian non-linear large-scale structure inference of the Sloan Digital Sky Survey Data Release 7. <i>Monthly Notices of the Royal Astronomical Society</i> , 2010, 409, 355-370.	4.4	75
9	Gentle reenergization of electrons in merging galaxy clusters. <i>Science Advances</i> , 2017, 3, e1701634.	10.3	65
10	Cosmic cartography of the large-scale structure with Sloan Digital Sky Survey data release 6. <i>Monthly Notices of the Royal Astronomical Society</i> , 2009, 400, 183-203.	4.4	64
11	Estimating galaxy cluster magnetic fields by the classical and hadronic minimum energy criterion. <i>Monthly Notices of the Royal Astronomical Society</i> , 2004, 352, 76-90.	4.4	56
12	Faraday tomography of the local interstellar medium with LOFAR: Galactic foregrounds towards IC 342. <i>Astronomy and Astrophysics</i> , 2017, 597, A98.	5.1	55
13	The denoised, deconvolved, and decomposed Fermi γ -ray sky. <i>Astronomy and Astrophysics</i> , 2015, 581, A126.	5.1	54
14	IMAGINE: a comprehensive view of the interstellar medium, Galactic magnetic fields and cosmic rays. <i>Journal of Cosmology and Astroparticle Physics</i> , 2018, 2018, 049-049.	5.4	49
15	Reconstruction of signals with unknown spectra in information field theory with parameter uncertainty. <i>Physical Review D</i> , 2011, 83, .	4.7	48
16	The Galactic Faraday depth sky revisited. <i>Astronomy and Astrophysics</i> , 2020, 633, A150.	5.1	43
17	Inference with minimal Gibbs free energy in information field theory. <i>Physical Review E</i> , 2010, 82, 051112.	2.1	36
18	Galactic dark matter search via phenomenological astrophysics modeling. <i>Journal of Cosmology and Astroparticle Physics</i> , 2016, 2016, 030-030.	5.4	35

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19	Probing Cosmic-Ray Transport with Radio Synchrotron Harps in the Galactic Center. <i>Astrophysical Journal Letters</i> , 2020, 890, L18.	8.3	34
20	Variable structures in M87* from space, time and frequency resolved interferometry. <i>Nature Astronomy</i> , 2022, 6, 259-269.	10.1	34
21	On the Three-dimensional Structure of Local Molecular Clouds. <i>Astrophysical Journal</i> , 2021, 919, 35.	4.5	33
22	Reconstruction of Gaussian and log-normal fields with spectral smoothness. <i>Physical Review E</i> , 2013, 87, .	2.1	31
23	Fast magnetic field amplification in distant galaxy clusters. <i>Nature Astronomy</i> , 2021, 5, 268-275.	10.1	31
24	The Per-Tau Shell: A Giant Star-forming Spherical Shell Revealed by 3D Dust Observations. <i>Astrophysical Journal Letters</i> , 2021, 919, L5.	8.3	31
25	Cosmic rays and the primordial gas. <i>Monthly Notices of the Royal Astronomical Society</i> , 2007, 380, 417-429.	4.4	30
26	Information Theory for Fields. <i>Annalen Der Physik</i> , 2019, 531, 1800127.	2.4	30
27	Unified radio interferometric calibration and imaging with joint uncertainty quantification. <i>Astronomy and Astrophysics</i> , 2019, 627, A134.	5.1	29
28	Comparison of classical and Bayesian imaging in radio interferometry. <i>Astronomy and Astrophysics</i> , 2021, 646, A84.	5.1	23
29	Reconstructing signals from noisy data with unknown signal and noise covariance. <i>Physical Review E</i> , 2011, 84, 041118.	2.1	22
30	Denoising, deconvolving, and decomposing photon observations. <i>Astronomy and Astrophysics</i> , 2015, 574, A74.	5.1	21
31	Magnetic Fields in Galaxy Clusters and in the Large-Scale Structure of the Universe. <i>Galaxies</i> , 2018, 6, 142.	3.0	21
32	Efficient wide-field radio interferometry response. <i>Astronomy and Astrophysics</i> , 2021, 646, A58.	5.1	20
33	The primordial magnetic field in our cosmic backyard. <i>Classical and Quantum Gravity</i> , 2018, 35, 154001.	4.0	17
34	Isotropization of ultra-high energy cosmic ray arrival directions by radio ghosts. <i>Astroparticle Physics</i> , 2001, 16, 47-66.	4.3	16
35	Optimal Belief Approximation. <i>Entropy</i> , 2017, 19, 402.	2.2	14
36	Information field dynamics for simulation scheme construction. <i>Physical Review E</i> , 2013, 87, 013308.	2.1	13

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37	Bayesian weak lensing tomography: Reconstructing the 3D large-scale distribution of matter with a lognormal prior. <i>Physical Review D</i> , 2017, 96, .	4.7	13
38	NIFT Numerical Information Field Theory: A Python Framework for Multicomponent Signal Inference on HPC Clusters. <i>Annalen Der Physik</i> , 2019, 531, 1800290.	2.4	13
39	Geometric Variational Inference. <i>Entropy</i> , 2021, 23, 853.	2.2	13
40	Simulation of stochastic network dynamics via entropic matching. <i>Physical Review E</i> , 2013, 87, 022719.	2.1	12
41	Generic inference of inflation models by non-Gaussianity and primordial power spectrum reconstruction. <i>Journal of Cosmology and Astroparticle Physics</i> , 2014, 2014, 048-048.	5.4	11
42	Improving stochastic estimates with inference methods: Calculating matrix diagonals. <i>Physical Review E</i> , 2012, 85, 021134.	2.1	9
43	Cosmic expansion history from SNe Ia data via information field theory: the charm code. <i>Astronomy and Astrophysics</i> , 2017, 599, A92.	5.1	9
44	The Galaxy in circular polarization: All-sky radio prediction, detection strategy, and the charge of the leptonic cosmic rays. <i>Physical Review D</i> , 2017, 96, .	4.7	9
45	Jets, bubbles, and heat pumps in galaxy clusters. <i>Monthly Notices of the Royal Astronomical Society</i> , 2019, 489, 1939-1949.	4.4	9
46	hammurabi X: Simulating Galactic Synchrotron Emission with Random Magnetic Fields. <i>Astrophysical Journal, Supplement Series</i> , 2020, 247, 18.	7.7	9
47	IMAGINE: Modeling the Galactic Magnetic Field. <i>Galaxies</i> , 2019, 7, 17.	3.0	8
48	Diagnostics for insufficiencies of posterior calculations in Bayesian signal inference. <i>Physical Review E</i> , 2013, 88, 053303.	2.1	5
49	Improving self-calibration. <i>Physical Review E</i> , 2014, 90, 043301.	2.1	5
50	Field dynamics inference via spectral density estimation. <i>Physical Review E</i> , 2017, 96, 052104.	2.1	5
51	Fast and precise way to calculate the posterior for the local non-Gaussianity parameter f_{nl} from cosmic microwave background observations. <i>Physical Review D</i> , 2013, 88, .	4.7	4
52	Stochastic determination of matrix determinants. <i>Physical Review E</i> , 2015, 92, 013302.	2.1	4
53	Signal inference with unknown response: Calibration-uncertainty renormalized estimator. <i>Physical Review E</i> , 2015, 91, 013311.	2.1	4
54	Dynamic system classifier. <i>Physical Review E</i> , 2016, 94, 012132.	2.1	4

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55	d2o: a distributed data object for parallel high-performance computing in Python. Journal of Big Data, 2016, 3, .	11.0	4
56	Noisy independent component analysis of autocorrelated components. Physical Review E, 2017, 96, 042114.	2.1	4
57	Towards information-optimal simulation of partial differential equations. Physical Review E, 2018, 97, 033314.	2.1	4
58	Denoising, deconvolving, and decomposing multi-domain photon observations. Astronomy and Astrophysics, 2018, 619, A119.	5.1	4
59	Field Dynamics Inference for Local and Causal Interactions. Annalen Der Physik, 2021, 533, 2000486.	2.4	4
60	Spectral study of the diffuse synchrotron source in the galaxy cluster Abell 523. Monthly Notices of the Royal Astronomical Society, 0, , .	4.4	4
61	Information Field Theory and Artificial Intelligence. Entropy, 2022, 24, 374.	2.2	4
62	A Reputation Game Simulation: Emergent Social Phenomena from Information Theory. Annalen Der Physik, 0, , 2100277.	2.4	4
63	Bayesian analysis of spatially distorted cosmic signals from Poissonian data. Monthly Notices of the Royal Astronomical Society, 2010, 409, 1393-1411.	4.4	3
64	New method for analyzing dark matter direct detection data. Physical Review D, 2014, 89, .	4.7	3
65	All-sky reconstruction of the primordial scalar potential from WMAP temperature data. Journal of Cosmology and Astroparticle Physics, 2015, 2015, 041-041.	5.4	3
66	Operator calculus for information field theory. Physical Review E, 2016, 94, 053306.	2.1	3
67	Consistency and convergence of simulation schemes in information field dynamics. Physical Review E, 2018, 98, .	2.1	3
68	A Bayesian Model for Bivariate Causal Inference. Entropy, 2020, 22, 46.	2.2	3
69	Bayesian Reasoning with Trained Neural Networks. Entropy, 2021, 23, 693.	2.2	2
70	Bayesian decomposition of the Galactic multi-frequency sky using probabilistic autoencoders. Astronomy and Astrophysics, 2021, 650, A100.	5.1	2
71	Dynamical Field Inference and Supersymmetry. Entropy, 2021, 23, 1652.	2.2	2
72	Puzzling large-scale polarization in the galaxy cluster Abell 523. Monthly Notices of the Royal Astronomical Society, 2022, 514, 4969-4981.	4.4	2

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73	Planck misst Licht vom Anfang der Zeit. Physik in Unserer Zeit, 2013, 44, 162-164.	0.0	1
74	The Rationality of Irrationality in the Monty Hall Problem. Annalen Der Physik, 2019, 531, 1800128.	2.4	1
75	The Physics of Information. Annalen Der Physik, 2019, 531, 1900059.	2.4	1
76	Toward Bayesian Data Compression. Annalen Der Physik, 2021, 533, 2000508.	2.4	1
77	hammurabi X: a C++ package for simulating Galactic emissions. Journal of Open Source Software, 2020, 5, 1889.	4.6	1
78	Probabilistic Autoencoder Using Fisher Information. Entropy, 2021, 23, 1640.	2.2	1
79	Particle acceleration processes in the cosmic large-scale structure. Proceedings of the International Astronomical Union, 2006, 2, 372-373.	0.0	0
80	Generic inference of inflation models by local non-Gaussianity. Proceedings of the International Astronomical Union, 2014, 10, 51-53.	0.0	0
81	Bayesian CMB foreground separation with a correlated log-normal model. Proceedings of the International Astronomical Union, 2014, 10, 16-18.	0.0	0
82	Turbulence via information field dynamics. Proceedings of the International Astronomical Union, 2015, 11, 730-730.	0.0	0
83	All-sky reconstruction of the primordial scalar potential & implications. Proceedings of the International Astronomical Union, 2015, 11, 49-49.	0.0	0