

Franco Vazza

List of Publications by Year in descending order

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124
papers

5,094
citations

71102

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h-index

106344

65
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124
all docs

124
docs citations

124
times ranked

2472
citing authors

#	ARTICLE	IF	CITATIONS
1	Turbulent gas motions in galaxy cluster simulations: the role of smoothed particle hydrodynamics viscosity. <i>Monthly Notices of the Royal Astronomical Society</i> , 2005, 364, 753-772.	4.4	259
2	Fundamental physics with the Square Kilometre Array. <i>Publications of the Astronomical Society of Australia</i> , 2020, 37, .	3.4	179
3	Turbulent motions and shocks waves in galaxy clusters simulated with adaptive mesh refinement. <i>Astronomy and Astrophysics</i> , 2009, 504, 33-43.	5.1	172
4	Shock waves in Eulerian cosmological simulations: main properties and acceleration of cosmic rays. <i>Monthly Notices of the Royal Astronomical Society</i> , 2009, 395, 1333-1354.	4.4	144
5	Massive and refined. <i>Astronomy and Astrophysics</i> , 2011, 529, A17.	5.1	140
6	Universal thermodynamic properties of the intracluster medium over two decades in radius in the X-COP sample. <i>Astronomy and Astrophysics</i> , 2019, 621, A41.	5.1	128
7	Discovery of radio haloes and double relics in distant MACS galaxy clusters: clues to the efficiency of particle acceleration. <i>Monthly Notices of the Royal Astronomical Society</i> , 2012, 426, 40-56.	4.4	118
8	The gas distribution in the outer regions of galaxy clusters. <i>Astronomy and Astrophysics</i> , 2012, 541, A57.	5.1	116
9	Non-thermal pressure support in X-COP galaxy clusters. <i>Astronomy and Astrophysics</i> , 2019, 621, A40.	5.1	108
10	On the amplification of magnetic fields in cosmic filaments and galaxy clusters~.... <i>Monthly Notices of the Royal Astronomical Society</i> , 2014, 445, 3706-3722.	4.4	97
11	A radio ridge connecting two galaxy clusters in a filament of the cosmic web. <i>Science</i> , 2019, 364, 981-984.	12.6	96
12	Resolved magnetic dynamo action in the simulated intracluster medium. <i>Monthly Notices of the Royal Astronomical Society</i> , 2018, 474, 1672-1687.	4.4	93
13	Magnetic Field Amplification in Galaxy Clusters and Its Simulation. <i>Space Science Reviews</i> , 2018, 214, 1.	8.1	88
14	Turbulence and vorticity in Galaxy clusters generated by structure formation. <i>Monthly Notices of the Royal Astronomical Society</i> , 2017, 464, 210-230.	4.4	86
15	A comparison of cosmological codes: properties of thermal gas and shock waves in large-scale structures. <i>Monthly Notices of the Royal Astronomical Society</i> , 2011, 418, 960-985.	4.4	83
16	Simulations of extragalactic magnetic fields and of their observables. <i>Classical and Quantum Gravity</i> , 2017, 34, 234001.	4.0	82
17	A new double radio relic in PSZ1 C096.89+24.17 and a radio relic mass~luminosity relation. <i>Monthly Notices of the Royal Astronomical Society</i> , 2014, 444, 3130-3138.	4.4	81
18	Do radio relics challenge diffusive shock acceleration?. <i>Monthly Notices of the Royal Astronomical Society</i> , 2014, 437, 2291-2296.	4.4	80

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19	Properties of gas clumps and gas clumping factor in the intra-cluster medium. Monthly Notices of the Royal Astronomical Society, 2013, 429, 799-814.	4.4	79
20	Turbulence in the ICM from mergers, cool-core sloshing, and jets: results from a new multi-scale filtering approach. Astronomy and Astrophysics, 2012, 544, A103.	5.1	73
21	Measurements and simulation of Faraday rotation across the Coma radio relic. Monthly Notices of the Royal Astronomical Society, 2013, 433, 3208-3226.	4.4	73
22	The X-ray/SZ view of the virial region. Astronomy and Astrophysics, 2013, 551, A22.	5.1	71
23	Gas clumping in galaxy clusters. Monthly Notices of the Royal Astronomical Society, 2015, 447, 2198-2208.	4.4	70
24	Constraining the efficiency of cosmic ray acceleration by cluster shocks. Monthly Notices of the Royal Astronomical Society, 2016, 459, 70-83.	4.4	68
25	Forecasts for the detection of the magnetised cosmic web from cosmological simulations. Astronomy and Astrophysics, 2015, 580, A119.	5.1	61
26	Massive and refined: A sample of large galaxy clusters simulated at high resolution. I: Thermal gas and properties of shock waves. New Astronomy, 2010, 15, 695-711.	1.8	59
27	Turbulent velocity fields in smoothed particle hydrodynamics simulated galaxy clusters: scaling laws for the turbulent energy. Monthly Notices of the Royal Astronomical Society: Letters, 2006, 369, L14-L18.	3.3	58
28	Electron and proton acceleration efficiency by merger shocks in galaxy clusters. Monthly Notices of the Royal Astronomical Society, 2015, 451, 2198-2211.	4.4	58
29	A shock front at the radio relic of Abell 2744. Monthly Notices of the Royal Astronomical Society, 2016, 461, 1302-1307.	4.4	55
30	Why are central radio relics so rare?. Monthly Notices of the Royal Astronomical Society, 2012, 421, 1868-1873.	4.4	54
31	Testing cosmic ray acceleration with radio relics: a high-resolution study using MHD and tracers. Monthly Notices of the Royal Astronomical Society, 2017, 464, 4448-4462.	4.4	54
32	Modelling injection and feedback of cosmic rays in grid-based cosmological simulations: effects on cluster outskirts. Monthly Notices of the Royal Astronomical Society, 2012, 421, 3375-3398.	4.4	52
33	On the Connection between Turbulent Motions and Particle Acceleration in Galaxy Clusters. Astrophysical Journal Letters, 2017, 843, L29.	8.3	51
34	Sardinia Radio Telescope observations of Abell 194. Astronomy and Astrophysics, 2017, 603, A122.	5.1	51
35	The X-ray/SZ view of the virial region. Astronomy and Astrophysics, 2013, 551, A23.	5.1	50
36	Second-order Fermi Reacceleration Mechanisms and Large-Scale Synchrotron Radio Emission in Intracluster Bridges. Physical Review Letters, 2020, 124, 051101.	7.8	49

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37	Turbulent pressure support and hydrostatic mass bias in the intracluster medium. <i>Monthly Notices of the Royal Astronomical Society</i> , 2020, 495, 864-885.	4.4	47
38	Simulations of ultra-high energy cosmic rays in the local Universe and the origin of cosmic magnetic fields. <i>Monthly Notices of the Royal Astronomical Society</i> , 2018, 475, 2519-2529.	4.4	45
39	Dynamical evolution of magnetic fields in the intracluster medium. <i>Monthly Notices of the Royal Astronomical Society</i> , 2019, 486, 623-638.	4.4	45
40	New constraints on the magnetization of the cosmic web using LOFAR Faraday rotation observations. <i>Monthly Notices of the Royal Astronomical Society</i> , 2020, 495, 2607-2619.	4.4	44
41	The turbulent pressure support in galaxy clusters revisited. <i>Monthly Notices of the Royal Astronomical Society: Letters</i> , 2018, 481, L120-L124.	3.3	42
42	New mysteries and challenges from the Toothbrush relic: wideband observations from 550 MHz to 8 GHz. <i>Astronomy and Astrophysics</i> , 2020, 636, A30.	5.1	42
43	Magnetism Science with the Square Kilometre Array. <i>Galaxies</i> , 2020, 8, 53.	3.0	41
44	Thermal and non-thermal traces of AGN feedback: results from cosmological AMR simulations. <i>Monthly Notices of the Royal Astronomical Society</i> , 2013, 428, 2366-2388.	4.4	40
45	LOFAR discovery of radio emission in MACSJ0717.5+3745. <i>Monthly Notices of the Royal Astronomical Society</i> , 2018, 478, 2927-2938.	4.4	39
46	Propagation of ultrahigh energy cosmic rays in extragalactic magnetic fields: a view from cosmological simulations. <i>Monthly Notices of the Royal Astronomical Society</i> , 2016, 462, 3660-3671.	4.4	38
47	Observations of a nearby filament of galaxy clusters with the Sardinia Radio Telescope. <i>Monthly Notices of the Royal Astronomical Society</i> , 2018, 479, 776-806.	4.4	38
48	Evolution of cosmic filaments and of their galaxy population from MHD cosmological simulations. <i>Monthly Notices of the Royal Astronomical Society</i> , 2016, 462, 448-463.	4.4	37
49	The intergalactic magnetic field probed by a giant radio galaxy. <i>Astronomy and Astrophysics</i> , 2019, 622, A16.	5.1	37
50	Shocks and Non-thermal Particles in Clusters of Galaxies. <i>Space Science Reviews</i> , 2019, 215, 1.	8.1	36
51	The Cluster HEritage project with XMM-Newton: Mass Assembly and Thermodynamics at the Endpoint of structure formation. <i>Astronomy and Astrophysics</i> , 2021, 650, A104.	5.1	36
52	The scatter in the radial profiles of X-ray luminous galaxy clusters as diagnostic of the thermodynamical state of the ICM. <i>Monthly Notices of the Royal Astronomical Society</i> , 2011, 413, 2305-2313.	4.4	34
53	The Coma Cluster at LOw Frequency ARray Frequencies. I. Insights into Particle Acceleration Mechanisms in the Radio Bridge. <i>Astrophysical Journal</i> , 2021, 907, 32.	4.5	34
54	The mixing and transport properties of the intra cluster medium: a numerical study using tracers particles. <i>Astronomy and Astrophysics</i> , 2010, 513, A32.	5.1	32

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55	Properties of cosmological filaments extracted from Eulerian simulations. <i>Monthly Notices of the Royal Astronomical Society</i> , 2015, 453, 1164-1185.	4.4	32
56	Exploring the spectral properties of radio relics â€” I: integrated spectral index and Mach number. <i>Monthly Notices of the Royal Astronomical Society</i> , 2021, 506, 396-414.	4.4	32
57	Detecting shocked intergalactic gas with X-ray and radio observations. <i>Astronomy and Astrophysics</i> , 2019, 627, A5.	5.1	32
58	Polarization of radio relics in galaxy clusters. <i>Monthly Notices of the Royal Astronomical Society</i> , 2019, 490, 3987-4006.	4.4	31
59	Probing the origin of extragalactic magnetic fields with Fast Radio Bursts. <i>Monthly Notices of the Royal Astronomical Society</i> , 2018, 480, 3907-3915.	4.4	30
60	Discovery of magnetic fields along stacked cosmic filaments as revealed by radio and X-ray emission. <i>Monthly Notices of the Royal Astronomical Society</i> , 2021, 505, 4178-4196.	4.4	30
61	Dissecting nonthermal emission in the complex multiple-merger galaxy cluster Abell 2744: Radio and X-ray analysis. <i>Astronomy and Astrophysics</i> , 2021, 654, A41.	5.1	30
62	Enhancing the Spectral Hardening of Cosmic TeV Photons by Mixing with Axionlike Particles in the Magnetized Cosmic Web. <i>Physical Review Letters</i> , 2017, 119, 101101.	7.8	29
63	The Coma Cluster at LOFAR Frequencies. II. The Halo, Relic, and a New Accretion Relic. <i>Astrophysical Journal</i> , 2022, 933, 218.	4.5	29
64	Physical insights from the spectrum of the radio halo in MACS J0717.5+3745. <i>Astronomy and Astrophysics</i> , 2021, 646, A135.	5.1	28
65	Morphology of radio relics â€” I. What causes the substructure of synchrotron emission?. <i>Monthly Notices of the Royal Astronomical Society</i> , 2020, 500, 795-816.	4.4	28
66	The impact of the SZ effect on cm-wavelength (1â€”30 GHz) observations of galaxy cluster radio relics. <i>Astronomy and Astrophysics</i> , 2016, 591, A142.	5.1	27
67	Evolution of vorticity and enstrophy in the intracluster medium. <i>Monthly Notices of the Royal Astronomical Society</i> , 2017, 471, 3212-3225.	4.4	27
68	Fast radio burst dispersion measures and rotation measures and the origin of intergalactic magnetic fields. <i>Monthly Notices of the Royal Astronomical Society</i> , 2019, 488, 4220-4238.	4.4	27
69	A survey of the thermal and non-thermal properties of cosmic filaments. <i>Monthly Notices of the Royal Astronomical Society</i> , 2019, 486, 981-1002.	4.4	27
70	Discovering the most elusive radio relic in the sky: diffuse shock acceleration caught in the act?. <i>Monthly Notices of the Royal Astronomical Society: Letters</i> , 2020, 496, L48-L53.	3.3	27
71	ALMA-SZ DETECTION OF A GALAXY CLUSTER MERGER SHOCK AT HALF THE AGE OF THE UNIVERSE. <i>Astrophysical Journal Letters</i> , 2016, 829, L23.	8.3	26
72	The entropy core in galaxy clusters: numerical and physical effects in cosmological grid simulations. <i>Monthly Notices of the Royal Astronomical Society</i> , 2011, 410, 461-483.	4.4	24

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73	Simulating the transport of relativistic electrons and magnetic fields injected by radio galaxies in the intracluster medium. <i>Astronomy and Astrophysics</i> , 2021, 653, A23.	5.1	24
74	Simulations of cosmic rays in large-scale structures: numerical and physical effects. <i>Monthly Notices of the Royal Astronomical Society</i> , 2014, 439, 2662-2677.	4.4	23
75	Radio haloes in Sunyaev-Zeldovich-selected clusters of galaxies: the making of a halo?. <i>Monthly Notices of the Royal Astronomical Society</i> , 2015, 454, 3391-3402.	4.4	22
76	Analytical model for cluster radio relics. <i>Monthly Notices of the Royal Astronomical Society</i> , 2020, 493, 2306-2317.	4.4	22
77	Observations of the galaxy cluster CIZA J2242.8+5301 with the Sardinia Radio Telescope. <i>Monthly Notices of the Royal Astronomical Society</i> , 2017, 472, 3605-3623.	4.4	21
78	Deep learning based detection of cosmological diffuse radio sources. <i>Monthly Notices of the Royal Astronomical Society</i> , 2018, 480, 3749-3761.	4.4	21
79	The Quantitative Comparison Between the Neuronal Network and the Cosmic Web. <i>Frontiers in Physics</i> , 2020, 8, .	2.1	21
80	Limiting the shock acceleration of cosmic ray protons in the ICM. <i>Monthly Notices of the Royal Astronomical Society: Letters</i> , 2020, 495, L112-L117.	3.3	20
81	Magnetogenesis and the Cosmic Web: A Joint Challenge for Radio Observations and Numerical Simulations. <i>Galaxies</i> , 2021, 9, 109.	3.0	20
82	The galaxy group NGC 507: Newly detected AGN remnant plasma transported by sloshing. <i>Astronomy and Astrophysics</i> , 2022, 661, A92.	5.1	20
83	A perfect power-law spectrum even at the highest frequencies: The Toothbrush relic. <i>Astronomy and Astrophysics</i> , 2020, 642, L13.	5.1	19
84	Particle re-acceleration and Faraday-complex structures in the RXCJ1314.4-2515 galaxy cluster. <i>Monthly Notices of the Royal Astronomical Society</i> , 0, , .	4.4	18
85	The intracluster magnetic field in the double relic galaxy cluster Abell 2345. <i>Monthly Notices of the Royal Astronomical Society</i> , 2021, 502, 2518-2535.	4.4	18
86	Understanding the radio relic emission in the galaxy cluster MACS J0717.5+3745: Spectral analysis. <i>Astronomy and Astrophysics</i> , 2021, 646, A56.	5.1	18
87	The primordial magnetic field in our cosmic backyard. <i>Classical and Quantum Gravity</i> , 2018, 35, 154001.	4.0	17
88	Shock waves in the magnetized cosmic web: the role of obliquity and cosmic ray acceleration. <i>Monthly Notices of the Royal Astronomical Society</i> , 2020, 496, 3648-3667.	4.4	17
89	Convolutional deep denoising autoencoders for radio astronomical images. <i>Monthly Notices of the Royal Astronomical Society</i> , 2021, 509, 990-1009.	4.4	17
90	Ultra-steep-spectrum Radio "Jellyfish" Uncovered in A2877. <i>Astrophysical Journal</i> , 2021, 909, 198.	4.5	16

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91	New constraints on the magnetic field in cosmic web filaments. <i>Astronomy and Astrophysics</i> , 2021, 652, A80.	5.1	16
92	Simulations and observational tests of primordial magnetic fields from Cosmic Microwave Background constraints. <i>Monthly Notices of the Royal Astronomical Society</i> , 2020, 500, 5350-5368.	4.4	16
93	Deep Low-frequency Radio Observations of A2256. I. The Filamentary Radio Relic. <i>Astrophysical Journal</i> , 2022, 927, 80.	4.5	16
94	Studying the Effect of Shock Obliquity on the $\hat{\nu}$ -ray and Diffuse Radio Emission in Galaxy Clusters. <i>Galaxies</i> , 2016, 4, 71.	3.0	15
95	The Northern Cross fast radio burst project " I. Overview and pilot observations at 408MHz. <i>Monthly Notices of the Royal Astronomical Society</i> , 2020, 494, 1229-1236.	4.4	14
96	Spectropolarimetric observations of the CIZA J2242.8+5301 northern radio relic: no evidence of high-frequency steepening. <i>Monthly Notices of the Royal Astronomical Society</i> , 2020, 498, 1628-1637.	4.4	13
97	Turbulent magnetic fields in the merging galaxy cluster MACSJ0717.5+3745. <i>Astronomy and Astrophysics</i> , 2022, 657, A2.	5.1	13
98	The Challenge of Detecting Intracluster Filaments with Faraday Rotation. <i>Galaxies</i> , 2018, 6, 128.	3.0	12
99	Morphology of radio relics " II. Properties of polarized emission. <i>Monthly Notices of the Royal Astronomical Society</i> , 2021, 507, 2714-2734.	4.4	12
100	The redshift evolution of extragalactic magnetic fields. <i>Monthly Notices of the Royal Astronomical Society</i> , 2022, 515, 256-270.	4.4	12
101	Redshift estimates for fast radio bursts and implications on intergalactic magnetic fields. <i>Monthly Notices of the Royal Astronomical Society</i> , 2020, 498, 4811-4829.	4.4	11
102	Exploring the relation between turbulent velocity and density fluctuations in the stratified intracluster medium. <i>Astronomy and Astrophysics</i> , 2022, 658, A149.	5.1	11
103	Multiwavelength cross-correlation analysis of the simulated cosmic web. <i>Monthly Notices of the Royal Astronomical Society</i> , 2020, 494, 5603-5618.	4.4	10
104	Properties of clumps and filaments around galaxy clusters. <i>Astronomy and Astrophysics</i> , 2021, 653, A171.	5.1	10
105	Turbulence in the Intracluster Medium. <i>Astrophysics and Space Science Library</i> , 2015, , 599-614.	2.7	10
106	Radio relics radio emission from multishock scenario. <i>Monthly Notices of the Royal Astronomical Society</i> , 2021, 509, 1160-1174.	4.4	10
107	Voyage through the hidden physics of the cosmic web. <i>Experimental Astronomy</i> , 2021, 51, 1043-1079.	3.7	9
108	Mapping "out-of-the-box" the properties of the baryons in massive halos. <i>Astronomy and Astrophysics</i> , 2022, 663, L6.	5.1	9

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109	Influence of adaptive mesh refinement and the hydro solver on shear-induced mass stripping in a minor-merger scenario. <i>Astronomy and Computing</i> , 2015, 9, 49-63.	1.7	8
110	On the Non-Thermal Energy Content of Cosmic Structures. <i>Galaxies</i> , 2016, 4, 60.	3.0	7
111	On the complexity and the information content of cosmic structures. <i>Monthly Notices of the Royal Astronomical Society</i> , 2017, 465, 4942-4955.	4.4	6
112	FIGARO simulation: Filaments & GALactic RadiO simulation. <i>Publications of the Astronomical Society of Australia</i> , 2021, 38, .	3.4	6
113	Numerical cosmology on the GPU with Enzo and Ramses. <i>Journal of Physics: Conference Series</i> , 2015, 640, 012058.	0.4	5
114	Unravelling the origin of large-scale magnetic fields in galaxy clusters and beyond through Faraday Rotation Measures with the SKA. , 2015, , .		5
115	Bent It Like FRs: Extended Radio AGN in the COSMOS Field and Their Large-Scale Environment. <i>Galaxies</i> , 2021, 9, 93.	3.0	5
116	Filamentary baryons and where to find them. <i>Astronomy and Astrophysics</i> , 2022, 662, A87.	5.1	5
117	On the alignment of haloes, filaments and magnetic fields in the simulated cosmic web. <i>Monthly Notices of the Royal Astronomical Society</i> , 2021, 503, 4016-4031.	4.4	4
118	Filaments of the radio cosmic web: opportunities and challenges for SKA. , 2015, , .		4
119	Galaxy Cluster Outskirts from the Thermal SZ and Non-Thermal Synchrotron Link. <i>Galaxies</i> , 2016, 4, 73.	3.0	2
120	How complex is the cosmic web?. <i>Monthly Notices of the Royal Astronomical Society</i> , 2020, 491, 5447-5463.	4.4	2
121	Joint inference on the redshift distribution of fast radio burst and on the intergalactic baryon content. <i>Monthly Notices of the Royal Astronomical Society</i> , 0, , .	4.4	2
122	Constraining magnetic fields in galaxy clusters. <i>Proceedings of the International Astronomical Union</i> , 2018, 14, 299-302.	0.0	1
123	Magnetic fields in the intergalactic medium and in the cosmic web. <i>Proceedings of the International Astronomical Union</i> , 2018, 14, 303-306.	0.0	0
124	The Complexity and Information Content of Simulated Universes. <i>Emergence, Complexity and Computation</i> , 2021, , 29-56.	0.3	0