Matthieu Schaller

List of Publications by Year
in descending order

115 papers	12,042 citations	28274 55 h-index	25787 108 g-index
115 all docs	115 docs citations	115 times ranked	5377 citing authors

#	Article	IF	Citations
1	The EAGLE project: simulating the evolution and assembly of galaxies and their environments. Monthly Notices of the Royal Astronomical Society, 2015, 446, 521-554.	4.4	2,549
2	The EAGLE simulations of galaxy formation: calibration of subgrid physics and model variations. Monthly Notices of the Royal Astronomical Society, 2015, 450, 1937-1961.	4.4	1,038
3	The APOSTLE simulations: solutions to the Local Group's cosmic puzzles. Monthly Notices of the Royal Astronomical Society, 2016, 457, 1931-1943.	4.4	453
4	The eagle simulations of galaxy formation: Public release of halo and galaxy catalogues. Astronomy and Computing, 2016, 15, 72-89.	1.7	394
5	Evolution of galaxy stellar masses and star formation rates in the eagle simulations. Monthly Notices of the Royal Astronomical Society, 2015, 450, 4486-4504.	4.4	332
6	The unexpected diversity of dwarf galaxy rotation curves. Monthly Notices of the Royal Astronomical Society, 2015, 452, 3650-3665.	4.4	302
7	Baryon effects on the internal structure of ΛCDM haloes in the EAGLE simulations. Monthly Notices of the Royal Astronomical Society, 2015, 451, 1247-1267.	4.4	302
8	The impact of angular momentum on black hole accretion rates in simulations of galaxy formation. Monthly Notices of the Royal Astronomical Society, 2015, 454, 1038-1057.	4.4	219
9	The dark nemesis of galaxy formation: why hot haloes trigger black hole growth and bring star formation to an end. Monthly Notices of the Royal Astronomical Society, 2017, 465, 32-44.	4.4	214
10	Colours and luminosities of z = 0.1 galaxies in the eagle simulation. Monthly Notices of the Royal Astronomical Society, 2015, 452, 2879-2896.	4.4	200
11	The eagle simulations of galaxy formation: the importance of the hydrodynamics scheme. Monthly Notices of the Royal Astronomical Society, 2015, 454, 2277-2291.	4.4	192
12	Molecular hydrogen abundances of galaxies in the EAGLE simulations. Monthly Notices of the Royal Astronomical Society, 2015, 452, 3815-3837.	4.4	182
13	The Cluster-EAGLE project: global properties of simulated clusters with resolved galaxies. Monthly Notices of the Royal Astronomical Society, 2017, 471, 1088-1106.	4.4	178
14	Size evolution of normal and compact galaxies in the EAGLE simulation. Monthly Notices of the Royal Astronomical Society, 2017, 465, 722-738.	4.4	170
15	The Hydrangea simulations: galaxy formation in and around massive clusters. Monthly Notices of the Royal Astronomical Society, 2017, 470, 4186-4208.	4.4	167
16	Bent by baryons: the low-mass galaxy-halo relation. Monthly Notices of the Royal Astronomical Society, 2015, 448, 2941-2947.	4.4	163
17	Bimodality of low-redshift circumgalactic O$\,$vi in non-equilibrium eagle zoom simulations. Monthly Notices of the Royal Astronomical Society, 2016, 460, 2157-2179.	4.4	159
18	The apostle project: Local Group kinematic mass constraints and simulation candidate selection. Monthly Notices of the Royal Astronomical Society, 2016, 457, 844-856.	4.4	154

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19	Optical colours and spectral indices of zÂ=Â0.1 eagle galaxies with the 3D dust radiative transfer code skirt. Monthly Notices of the Royal Astronomical Society, 2017, 470, 771-799.	4.4	152
20	A chronicle of galaxy mass assembly in the EAGLE simulation. Monthly Notices of the Royal Astronomical Society, 2017, 464, 1659-1675.	4.4	145
21	The EAGLE simulations: atomic hydrogen associated with galaxies. Monthly Notices of the Royal Astronomical Society, 2017, 464, 4204-4226.	4.4	130
22	The distribution of neutral hydrogen around high-redshift galaxies and quasars in the EAGLE simulation. Monthly Notices of the Royal Astronomical Society, 2015, 452, 2034-2056.	4.4	124
23	Subhalo abundance matching and assembly bias in the EAGLE simulation. Monthly Notices of the Royal Astronomical Society, 2016, 460, 3100-3118.	4.4	122
24	The chosen few: the low-mass haloes that host faint galaxies. Monthly Notices of the Royal Astronomical Society, 2016, 456, 85-97.	4.4	117
25	The distribution of atomic hydrogen in eagle galaxies: morphologies, profiles, and Hâ‰ˆi holes. Monthly Notices of the Royal Astronomical Society, 2016, 456, 1115-1136.	4.4	117
26	The alignment and shape of dark matter, stellar, and hot gas distributions in the EAGLE and cosmo-OWLS simulations. Monthly Notices of the Royal Astronomical Society, 2015, 453, 721-738.	4.4	108
27	It is not easy being green: the evolution of galaxy colour in the EAGLE simulation. Monthly Notices of the Royal Astronomical Society, 2016, 460, 3925-3939.	4.4	104
28	The origin of scatter in the stellar massâ€"halo mass relation of central galaxies in the EAGLE simulation. Monthly Notices of the Royal Astronomical Society, 2017, 465, 2381-2396.	4.4	100
29	Far-infrared and dust properties of present-day galaxies in the EAGLE simulations. Monthly Notices of the Royal Astronomical Society, 2016, 462, 1057-1075.	4.4	95
30	Mass-Discrepancy Acceleration Relation: A Natural Outcome of Galaxy Formation in Cold Dark Matter Halos. Physical Review Letters, 2017, 118, 161103.	7.8	95
31	The link between the assembly of the inner dark matter halo and the angular momentum evolution of galaxies in the EAGLE simulation. Monthly Notices of the Royal Astronomical Society, 2016, 460, 4466-4482.	4.4	86
32	Galaxies in the EAGLE hydrodynamical simulation and in the Durham and Munich semi-analytical models. Monthly Notices of the Royal Astronomical Society, 2016, 461, 3457-3482.	4.4	85
33	Cosmic distribution of highly ionized metals and their physical conditions in the EAGLE simulations. Monthly Notices of the Royal Astronomical Society, 2016, 459, 310-332.	4.4	85
34	The Fundamental Plane of star formation in galaxies revealed by the EAGLE hydrodynamical simulations. Monthly Notices of the Royal Astronomical Society, 2016, 459, 2632-2650.	4.4	84
35	Supermassive black holes in the EAGLE Universe. Revealing the observables of their growth. Monthly Notices of the Royal Astronomical Society, 2016, 462, 190-205.	4.4	84
36	The effect of baryons on the inner density profiles of rich clusters. Monthly Notices of the Royal Astronomical Society, 2015, 452, 343-355.	4.4	80

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37	The link between galaxy and black hole growth in the eagle simulation. Monthly Notices of the Royal Astronomical Society, 2017, 468, 3395-3407.	4.4	79
38	Tidal stripping and the structure of dwarf galaxies in the Local Group. Monthly Notices of the Royal Astronomical Society, 2018, 476, 3816-3836.	4.4	79
39	The origin of diverse α-element abundances in galaxy discs. Monthly Notices of the Royal Astronomical Society, 2018, 477, 5072-5089.	4.4	77
40	The effect of baryons on redshift space distortions and cosmic density and velocity fields in the EAGLE simulation. Monthly Notices of the Royal Astronomical Society: Letters, 2016, 461, L11-L15.	3.3	75
41	Simulated Milky Way analogues: implications for dark matter direct searches. Journal of Cosmology and Astroparticle Physics, 2016, 2016, 024-024.	5.4	74
42	The relation between galaxy morphology and colour in the EAGLE simulation. Monthly Notices of the Royal Astronomical Society: Letters, 2017, 472, L45-L49.	3.3	71
43	The low-mass end of the baryonic Tully–Fisher relation. Monthly Notices of the Royal Astronomical Society, 2017, 464, 2419-2428.	4.4	69
44	The origin of the mass discrepancy–acceleration relation in ΛCDM. Monthly Notices of the Royal Astronomical Society, 2017, 471, 1841-1848.	4.4	68
45	Intrinsic alignments of galaxies in the EAGLE and cosmo-OWLS simulations. Monthly Notices of the Royal Astronomical Society, 2015, 454, 3328-3340.	4.4	66
46	The brighter galaxies reionized the Universe. Monthly Notices of the Royal Astronomical Society: Letters, 2016, 458, L94-L98.	3.3	66
47	Barred galaxies in the EAGLE cosmological hydrodynamical simulation. Monthly Notices of the Royal Astronomical Society, 2017, 469, 1054-1064.	4.4	66
48	The gas fractions of dark matter haloes hosting simulated $\sim L\star$ galaxies are governed by the feedback history of their black holes. Monthly Notices of the Royal Astronomical Society, 2019, 485, 3783-3793.	4.4	66
49	Missing dark matter in dwarf galaxies?. Monthly Notices of the Royal Astronomical Society, 2016, 460, 3610-3623.	4.4	62
50	The evolution of the star formation rate function in the EAGLE simulations: a comparison with UV, IR and Hα observations from z $\sim$ 8 to z $\sim$ 0. Monthly Notices of the Royal Astronomical Society, 2017, 472, 919-939.	4.4	62
51	The diverse density profiles of galaxy clusters with self-interacting dark matter plus baryons. Monthly Notices of the Royal Astronomical Society: Letters, 2018, 476, L20-L24.	3.3	62
52	Data Release of UV to Submillimeter Broadband Fluxes for Simulated Galaxies from the EAGLE Project. Astrophysical Journal, Supplement Series, 2018, 234, 20.	7.7	60
53	The <scp>artemis</scp> simulations: stellar haloes of Milky Way-mass galaxies. Monthly Notices of the Royal Astronomical Society, 2020, 498, 1765-1785.	4.4	60
54	The relationship between the morphology and kinematics of galaxies and its dependence on dark matter halo structure in EAGLE. Monthly Notices of the Royal Astronomical Society, 2019, 485, 972-987.	4.4	59

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55	Energy equipartition between stellar and dark matter particles in cosmological simulations results in spurious growth of galaxy sizes. Monthly Notices of the Royal Astronomical Society: Letters, 2019, 488, L123-L128.	3.3	57
56	The BUFFALO HST Survey. Astrophysical Journal, Supplement Series, 2020, 247, 64.	7.7	57
57	Knowing the unknowns: uncertainties in simple estimators of galactic dynamical masses. Monthly Notices of the Royal Astronomical Society, 2017, 469, 2335-2360.	4.4	54
58	Properties of Local Group galaxies in hydrodynamical simulations of sterile neutrino dark matter cosmologies. Monthly Notices of the Royal Astronomical Society, 2017, 468, 4285-4298.	4.4	50
59	Simulated Milky Way analogues: implications for dark matter indirect searches. Journal of Cosmology and Astroparticle Physics, 2015, 2015, 053-053.	5.4	49
60	The oxygen abundance gradients in the gas discs of galaxies in the EAGLE simulation. Monthly Notices of the Royal Astronomical Society, 2019, 482, 2208-2221.	4.4	49
61	Alignments between galaxies, satellite systems and haloes. Monthly Notices of the Royal Astronomical Society, 2016, 460, 3772-3783.	4.4	47
62	Angular momentum evolution of galaxies over the past 10 Gyr: A MUSE and KMOS dynamical survey of 400 star-forming galaxies from z = 0.3–1.7. Monthly Notices of the Royal Astronomical Society, 0, , stx201.	4.4	45
63	The origin of the α-enhancement of massive galaxies. Monthly Notices of the Royal Astronomical Society: Letters, 2016, 461, L102-L106.	3.3	44
64	Music from the heavens – gravitational waves from supermassive black hole mergers in the EAGLE simulations. Monthly Notices of the Royal Astronomical Society, 2016, 463, 870-885.	4.4	44
65	The properties of 'dark' ΛCDM haloes in the Local Group. Monthly Notices of the Royal Astronomical Society, 2017, 465, 3913-3926.	4.4	44
66	Size matters: abundance matching, galaxy sizes, and the Tully–Fisher relation in EAGLE. Monthly Notices of the Royal Astronomical Society, 2017, 464, 4736-4746.	4.4	43
67	Comparing galaxy formation in semi-analytic models and hydrodynamical simulations. Monthly Notices of the Royal Astronomical Society, 2018, 474, 492-521.	4.4	42
68	Recycled stellar ejecta as fuel for star formation and implications for the origin of the galaxy mass–metallicity relation. Monthly Notices of the Royal Astronomical Society, 2016, 456, 1235-1258.	4.4	38
69	Tidal dwarf galaxies in cosmological simulations. Monthly Notices of the Royal Astronomical Society, 2018, 474, 580-596.	4.4	38
70	Dark matter annihilation radiation in hydrodynamic simulations of Milky Way haloes. Monthly Notices of the Royal Astronomical Society, 2016, 455, 4442-4451.	4.4	37
71	The shapes of the rotation curves of star-forming galaxies over the last ≈10 Gyr. Monthly Notices of the Royal Astronomical Society, 2019, 485, 934-960.	4.4	37
72	Planetary giant impacts: convergence of high-resolution simulations using efficient spherical initial conditions and swift. Monthly Notices of the Royal Astronomical Society, 2019, 487, 5029-5040.	4.4	35

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73	Winds of change: reionization by starburst galaxies. Monthly Notices of the Royal Astronomical Society, 2017, 468, 2176-2188.	4.4	34
74	The origin of compact galaxies with anomalously high black hole masses. Monthly Notices of the Royal Astronomical Society, 2016, 460, 1147-1161.	4.4	33
75	How to get cool in the heat: comparing analytic models of hot, cold, and cooling gas in haloes and galaxies with EAGLE. Monthly Notices of the Royal Astronomical Society, 0, , stx243.	4.4	32
76	Ring galaxies in the EAGLE hydrodynamical simulations. Monthly Notices of the Royal Astronomical Society, 2018, 481, 2951-2969.	4.4	31
77	Observed structural parameters of EAGLE galaxies: reconciling the massâ€"size relation in simulations with local observations. Monthly Notices of the Royal Astronomical Society, 2022, 511, 2544-2564.	4.4	29
78	The offsets between galaxies and their dark matter in Î› cold dark matter. Monthly Notices of the Royal Astronomical Society: Letters, 2015, 453, L58-L62.	3.3	28
79	Small-scale galaxy clustering in the eagle simulation. Monthly Notices of the Royal Astronomical Society, 2017, 470, 1771-1787.	4.4	28
80	SWIFT. , 2016, , .		26
81	The diverse evolutionary pathways of post-starburst galaxies. Nature Astronomy, 2019, 3, 440-446.	10.1	26
82	Growing a â€˜cosmic beastâ€™: observations and simulations of MACSâ€‰J0717.5+3745. Monthly Notices of the Royal Astronomical Society, 2018, 481, 2901-2917.	4.4	25
83	Baryon effects on void statistics in the EAGLE simulation. Monthly Notices of the Royal Astronomical Society, 2017, 470, 4434-4452.	4.4	24
84	SEAGLE â€" I. A pipeline for simulating and modelling strong lenses from cosmological hydrodynamic simulations. Monthly Notices of the Royal Astronomical Society, 2018, 479, 4108-4125.	4.4	24
85	Numerical convergence of hydrodynamical simulations of galaxy formation: the abundance and internal structure of galaxies and their cold dark matter haloes. Monthly Notices of the Royal Astronomical Society, 2020, 493, 2926-2951.	4.4	24
86	<scp>Sphenix</scp>: smoothed particle hydrodynamics for the next generation of galaxy formation simulations. Monthly Notices of the Royal Astronomical Society, 2022, 511, 2367-2389.	4.4	24
87	What to expect from dynamical modelling of galactic haloes â€" II. The spherical Jeans equation. Monthly Notices of the Royal Astronomical Society, 2018, 476, 5669-5680.	4.4	22
88	Hydrostatic mass estimates of massive galaxy clusters: a study with varying hydrodynamics flavours and non-thermal pressure support. Monthly Notices of the Royal Astronomical Society, 2020, 491, 1622-1642.	4.4	22
89	Stellar splashback: the edge of the intracluster light. Monthly Notices of the Royal Astronomical Society, 2020, 500, 4181-4192.	4.4	22
90	Reducing biases on H0 measurements using strong lensing and galaxy dynamics: results from the eagle simulation. Monthly Notices of the Royal Astronomical Society, 2018, 474, 3403-3422.	4.4	20

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91	A machine learning approach to mapping baryons on to dark matter haloes using the <scp>eagle</scp> and <scp>C-EAGLE</scp> simulations. Monthly Notices of the Royal Astronomical Society, 2021, 509, 5046-5061.	4.4	20
92	BEING WISE II: REDUCING THE INFLUENCE OF STAR FORMATION HISTORY ON THE MASS-TO-LIGHT RATIO OF QUIESCENT GALAXIES. Astrophysical Journal, 2016, 832, 198.	4.5	19
93	SIBELIUS-DARK: a galaxy catalogue of the local volume from a constrained realization simulation. Monthly Notices of the Royal Astronomical Society, 2022, 512, 5823-5847.	4.4	18
94	The dynamics and distribution of angular momentum in HiZELS star-forming galaxies at<i>z</i> Â=Â0.8â€"3.3. Monthly Notices of the Royal Astronomical Society, 2019, 486, 175-194.	4.4	17
95	The importance of black hole repositioning for galaxy formation simulations. Monthly Notices of the Royal Astronomical Society, 2022, 516, 167-184.	4.4	17
96	The low abundance and insignificance of dark discs in simulated Milky Way galaxies. Monthly Notices of the Royal Astronomical Society: Letters, 2016, 461, L56-L61.	3.3	16
97	Constraining the inner density slope of massive galaxy clusters. Monthly Notices of the Royal Astronomical Society, 2020, 496, 4717-4733.	4.4	15
98	Galaxy formation efficiency and the multiverse explanation of the cosmological constant with EAGLE simulations. Monthly Notices of the Royal Astronomical Society, 2018, 477, 3727-3743.	4.4	14
99	The evolution of the baryon fraction in haloes as a cause of scatter in the galaxy stellar mass in the<scp>eagle</scp>simulation. Monthly Notices of the Royal Astronomical Society, 2019, 482, 3261-3273.	4.4	13
100	Tidal features of classical Milky Way satellites in a Î› cold dark matter universe. Monthly Notices of the Royal Astronomical Society, 2017, 468, 4887-4901.	4.4	12
101	A high-resolution cosmological simulation of a strong gravitational lens. Monthly Notices of the Royal Astronomical Society, 2021, 501, 4657-4668.	4.4	12
102	The importance of the way in which supernova energy is distributed around young stellar populations in simulations of galaxies. Monthly Notices of the Royal Astronomical Society, 2022, 514, 249-264.	4.4	12
103	A new framework for numerical simulations of structure formation. Monthly Notices of the Royal Astronomical Society, 2014, 442, 3073-3095.	4.4	10
104	The impact of dark energy on galaxy formation. What does the future of our Universe hold?. Monthly Notices of the Royal Astronomical Society, 2018, 477, 3744-3759.	4.4	10
105	The SAMI Galaxy Survey: understanding observations of large-scale outflows at low redshift with EAGLE simulations. Monthly Notices of the Royal Astronomical Society, 2018, 473, 380-397.	4.4	9
106	The signal of decaying dark matter with hydrodynamical simulations. Monthly Notices of the Royal Astronomical Society, 2019, 485, 4071-4089.	4.4	9
107	SEAGLE â€" II. Constraints on feedback models in galaxy formation from massive early-type strong-lens galaxies. Monthly Notices of the Royal Astronomical Society, 2021, 504, 3455-3477.	4.4	9
108	Inconsistencies arising from the coupling of galaxy formation sub-grid models to pressure-smoothed particle hydrodynamics. Monthly Notices of the Royal Astronomical Society, 2021, 505, 2316-2327.	4.4	8

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109	A sparse regression approach to modelling the relation between galaxy stellar masses and their host haloes. Monthly Notices of the Royal Astronomical Society, 2021, 507, 4584-4602.	4.4	7
110	Setting the scene for BUFFALO: a study of the matter distribution in the HFF galaxy cluster MACSâ€‰J0416.1â~2403 and its parallel field. Monthly Notices of the Royal Astronomical Society, 2020, 494, 349-362.	4.4	4
111	SEAGLE â€" III: Towards resolving the mismatch in the dark-matter fraction in early-type galaxies between simulations and observations. Monthly Notices of the Royal Astronomical Society, 2021, 509, 1245-1251.	4.4	3
112	Predictions of hydrodynamic simulations for direct dark matter detection. Journal of Physics: Conference Series, 2016, 718, 042007.	0.4	1
113	The Fermi GeV excess: challenges for the dark matter interpretation. Journal of Physics: Conference Series, 2016, 718, 042010.	0.4	1
114	Massively Parallel Particle Hydrodynamics at exa-scale. Computing in Science and Engineering, 2021, , 1-1.	1.2	0
115	A Hybrid MPI+Threads Approach to Particle Group Finding Using Union-Find. Advances in Parallel Computing, 2020, , .	0.3	0