

ANDREW PONTZEN PhD, M.A., M. Sci
Curriculum Vitae

Major research interests

- Dynamics of galaxy formation, especially the interplay between feedback and dynamics;
 - Observational probes of the physics of galaxy formation and reionization; radiative transfer effects;
 - Dynamics of general relativity and cosmological perturbations.
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Education

Oct 2005 – Sept 2009	STFC PhD Studentship, Institute of Astronomy, Cambridge
Research supervisors	Anthony Challinor and Max Pettini
Thesis	Cosmology: small and large (awarded December 2009)
Thesis examiners	Professor George Efstathiou and Professor Joe Silk
Oct 2001 – June 2005	St John's College, Cambridge; Natural Sciences M. Sci
Final year result	1st class B.A. & M. Sci
Research supervisor	Justin Read
Thesis	The structure of low mass dark matter halos

Employment

Oct 2017 – present	Royal Society University Research Fellow Associate Professor, University College London
Oct 2013 – Sep 2017	Royal Society University Research Fellow Proleptic lecturer, University College London
Oct 2011 – Sep 2013	James Martin Research Fellowship, Oxford Astrophysics Henry Skynner Research Fellowship, Balliol College, Oxford
Oct 2009 – Sept 2011	Research Fellowship, Emmanuel College, Cambridge
June 2005 – Oct 2005	Paid summer internship, Institute of Astronomy, Cambridge

Bibliographic data

55 refereed publications (3 further publications submitted); 4742 citations; h-index of 28; post-PhD (i.e. not counting citations to thesis publications) m-factor 3.1. Source: NASA ADS, 6 November 2018.

Grants

Oct 2019 – Sep 2024	ERC Consolidator Grant. <i>Understanding the diversity of galaxy morphology in the era of large spectroscopic surveys</i> . PI; €1.8M
Jan 2019 – Oct 2021	Royal Society Enhancement Award. <i>Consolidating leadership in a new approach to galaxy formation</i> . PI; £200K
Apr 2018 – Mar 2021	STFC Consolidated Grant. Co-I of grant UCL Astrophysics 2018-2021 (£1.4M). PI of funded sub-project <i>The Large-scale Lyman-alpha forest as a new probe of the sources of H and He reionisation</i> ; £130K.
Oct 2018 – Sep 2021	Royal Society University Research Fellowship Renewal. <i>Understanding the Hubble sequence</i> . PI; £330K
Oct 2018 – Sep 2021	US National Science Foundation Grant NSF AST 1812531 (external) <i>The evolution of galaxy fuelling and feedback in the last 7 billion years</i> Collaborator; PI Jessica Werk, University of Washington; \$611K

Oct 2018 – Sep 2021	US National Science Foundation Grant NSF AST 1813961 (external). <i>Of mice and monsters: Investigating black hole growth in dwarf galaxies.</i> Collaborator; PI Alyson Brooks, University of Rutgers; \$357K
Jan 2018 – Dec 2018	Royal Society Public Engagement Award. <i>Experimenting with reality.</i> PI; £4,800
Jan 2018 – Dec 2018	Institute of Physics Public Engagement Grant Scheme (external) <i>A Tree Falls in the Forest.</i> Co-I; PI Michaela French at Royal College of Art; £1,800
Nov 2017 – Oct 2018	Royal Society Enhancement Award <i>Leadership in analysis of massive cosmological simulations.</i> PI; £10K
Oct 2013 – Sep 2018	Royal Society University Research Fellowship UF120142 <i>Fingerprinting Dark Matter.</i> PI; £450K
Jan 2012 – Dec 2012	Institute of Physics Public Engagement Grant Scheme <i>Adventures in Space- and Story-time.</i> PI; £1,000
Oct 2011 – Sep 2012	NASA HST Cycle 19 Theory Research Grant (external) <i>Interpreting the escape of ionizing radiation from galaxies</i> Collaborator; PI Alyson Brooks, University of Madison; \$139K
Oct 2010 – Sep 2013	US National Science Foundation Grant NSF 05-608 (external) <i>Cosmological simulations of the formation of dark matter cores</i> Collaborator; PI Fabio Governato, University of Washington; \$380K

Prizes and recognition

April 2018	Boris A. Jacobsohn Memorial Lecture, University of Washington. An annual prize and lecture awarded by the University of Washington for distinguished physicists in any area.
July 2017	Institute of Physics Gravitational Thesis Prize. Awarded to my PhD student Daniela Saadeh.
July 2016	Royal Astronomical Society Fowler Award. Awarded by the RAS for early-career research achievement.
March 2016	Elected to membership of the Foundational Questions Institute.
January 2013	NASA ADS Article of the Year. Pontzen & Governato MNRAS, 421, 3464 (2012)
November 2012	Classical & Quantum Gravity Cosmology Article of the Year. Pontzen & Challinor CQG, 28, 18 (2011).

Invited talks

The name of the conference or lecture series is given in italics. Contributed talks are not listed here.

September 2018	Astrophysik Institut Potsdam. <i>The role of feedback in galaxy formation.</i>
June 2018	University of Barcelona. <i>The vacuum of the Universe: from cosmology to particle physics.</i>
April 2018	University of Washington, Seattle. <i>Jacobsohn Memorial Lecture.</i>
November 2017	Lorentz Center, Leiden. <i>The physics of quenching massive galaxies at high redshift.</i>
September 2017	KU Leuven. <i>Frontiers of Astrophysical Modelling.</i>
August 2017	Florence. <i>Challenges in galaxy evolution: from black holes to the cosmic web.</i>
July 2017	Niels Bohr Institute, Copenhagen. <i>Self-interacting dark matter.</i>
July 2017	University of California, Berkeley and Flatiron CCA. <i>The non-linear Universe workshop</i> (held in Solvenia).

May 2017	University of Oxford. <i>Cosmology seminar</i> .
May 2017	Flatiron CCA (Center for Computational Astrophysics), New York. <i>Colloquium</i> .
May 2017	GRAPPA (Gravitation Astroparticle Physics Amsterdam). <i>Colloquium</i> .
April 2017	Oskar Klein Center, Stockholm. <i>Colloquium</i> .
January 2017	Department of Applied Mathematics and Theoretical Physics, Cambridge. <i>Cosmology seminar</i> .
November 2016	Royal Astronomical Society, London. <i>Fowler Award Lecture</i> .
August 2016	University of California, Santa Cruz. <i>Galaxy Formation 2016</i>
July 2016	McMaster University, Canada. <i>Great Lakes Cosmology 2016</i>
May 2016	Institut d'Astrophysique de Paris. <i>Secular evolution of galaxies</i> .
May 2016	Liverpool John Moores University. <i>Astrophysics seminar series</i> .
May 2016	Nottingham University. <i>Astronomy Seminar Series</i>
November 2015	Paris Observatory. <i>Feedback and re-accretion in galaxies</i> .
March 2015	University of California, Berkeley. <i>Cosmology seminar series</i>
February 2015	University of Sussex. <i>Cosmology seminar series</i> .
December 2014	University of Surrey. <i>Physics department Christmas colloquium</i>
September 2014	Geneva Observatory. <i>Cosmology seminar series</i>
July 2014	Budapest. <i>Unsolved problems in astrophysics</i> .
May 2014	Imperial College, London. <i>Astrophysics seminar series</i> .
May 2014	Max Planck Society, Ringberg. <i>Gas in and around galaxies</i> .
February 2014	California Institute of Technology. <i>Astronomy colloquium</i> .
February 2014	Stanford University. <i>Cosmology seminar</i> .
February 2014	University of California, Santa Cruz. <i>Astronomy colloquium</i> .
January 2014	University of Birmingham. <i>Astronomy seminar</i> .
November 2013	ASTRON. <i>Astronomy seminar</i>
October 2013	Mullard Space Science Laboratory (UCL). <i>Astronomy seminar</i> .

28 invited talks prior to my appointment at UCL are not listed here for brevity.

Research supervision as primary supervisor

Oct 2016 – Sep 2019	Martin Rey (PhD candidate). Two publications; on track for timely submission. Has received postdoc position offers.
Oct 2017 – June 2019	Andrei Cuceu (UCL M.Sci 1st class). Secured a funded PhD position in UCL.
Jan 2014 – Dec 2017	Teresita Suárez Noguez (PhD candidate). Two publications; secured a postdoctoral position at Edinburgh University.
Oct 2013 – Sep 2016	Daniela Saadeh (UCL PhD). Two publications; secured a postdoctoral position at Nottingham University. Won the Institute of Physics Gravitational Thesis Prize 2017.
Oct 2015 – June 2016	Harry Johnstone (UCL M.Sci 1st class). Secured a funded PhD position in UCL.
Oct 2014 – June 2015	Charlotte Owen (UCL M.Sci 1st class). Secured a funded PhD position at Lancaster University.
Oct 2013 – June 2014	Theo Le Bret (UCL M.Sci 1st class). One publication; secured a funded PhD position at Oxford University.
Oct 2010 – July 2011	Fan Ye (Cambridge M.Sci 2:1).
Oct 2008 – July 2009	Alis Deason (Cambridge M.Sci 1st class). One publication.

Research supervision as secondary or joint supervisor

Oct 2017 – Sep 2020	Nicolas Angelides (PhD candidate).
Oct 2017 – Sep 2020	Romain Meyer (PhD candidate).
Oct 2017 – Sep 2020	James Farr (PhD candidate).
Oct 2015 – Sep 2019	Luisa Lucie-Smith (PhD candidate).
Oct 2016 – Sep 2019	Harry Johnston (PhD candidate).
Oct 2014 – Sep 2017	Keir Rogers (UCL PhD awarded).

Teaching

Oct 2017 – present	Lead, <i>Cosmoparticle Initiative Peer Learning</i> . I developed and lead delivery for this graduate-level series on skills ranging from statistical methods to time management.
Jan 2016 – present	Lecturer, <i>PHAS0067 Advanced Physical Cosmology</i> , UCL (also accessible to other London students through the intercollegiate lecture scheme).
Oct 2013 – Dec 2014	Assistant, <i>PHAS1240 Practical Skills – Computing</i> , UCL.
Oct 2013 – July 2014	Awarded <i>Fellowship of the Higher Education Academy</i> through completing Professional Certificate in Teaching and Learning in Higher and Professional Education.
Sep 2012	Lecturer, <i>Numerical Simulations of Galactic Dynamics</i> . STFC Graduate Summer School.
Mar 2011 and 2012	Lecturer, <i>An Introduction to the Intergalactic Medium</i> . Oxford University graduate lectures.
Oct 2010	Lecturer, <i>An Introduction to Python</i> . Cambridge University graduate lectures.
Jan 2007 – Mar 2009	Class tutor, <i>Physical Cosmology</i> . Cambridge University Part III mathematics.
Oct 2006 – July 2011	Supervisor, <i>Part 1B Mathematics for Physical Scientists</i> . Cambridge University.

Professional service

Ongoing	Referee for Nature, Physical Review Letters, Physical Review D, Astrophysical Journal and Monthly Notices of the Royal Astronomical Society.
October 2017 – present	Resource allocation panel member for UKRI DiRAC Supercomputing facility.
October 2014 – present	Referee for UKRI STFC Rutherford Fellowships, Consolidated Grants, Large Project Grants and for Royal Society Research Fellowships.
Oct 2014 – present	Visiting Lecturer, Royal College of Art, London.
July 2019	Scientific organizing committee, Small Galaxies, Cosmic Questions International conference at Durham University
August 2018	External examiner for Stuart McAlpine (Durham) PhD thesis
July 2018	Co-proposer and scientific organizing committee, Perfect Pixels. Accurate Astrophysics. Correct Cosmology. International workshop at Aspen Center for Physics (USA)
September 2017	External examiner for James Petts (Surrey) PhD thesis
July 2016	Scientific organizing committee, <i>Diving into the Dark</i> . International conference at University of Melbourne, Australia
December 2015	External examiner for Michelle Furlong (Durham) PhD thesis

Feb 2014 – Feb 2015 Invited panel member, Institute of Physics review of Astroparticle Physics
October 2014 Examiner for Thomas Richardson (Kings College London) PhD thesis

Institutional service

Oct 2017 – present Instigator and chair of UCL Astrophysics welfare committee. Schemes run by this committee include peer mentoring.

Oct 2017 – present Co-conceiver and deputy director of UCL Cosmoparticle Initiative (ucl.ac.uk/cosmoparticle)

Dec 2016 – June 2017 Co-proposer and organisation committee for UCL symposium on preventing sexual harassment. Led to a continuing task force and full-time manager post being established.

Jan 2016 – present Member of UCL Astrophysics computing committee

July 2015 Chaired LOC and SOC for “Accurate Astrophysics, Correct Cosmology”, an international meeting on the interface between cosmology and astrophysics.

July 2014 – present Mentor for fellowship applicants, providing feedback and support for applications to STFC and Royal Society schemes

Jan 2014 – present UCL Astrophysics PhD admissions committee co-chair

Oct 2013 – June 2015 UCL Astrophysics seminar organiser

Public engagement and knowledge transfer

2017 – present Trajectory board member for *Cheltenham Science Festival*, advising on event development and speaker invitations.

2015 – present Regularly quoted in national press including *The Guardian*, *The Times*, *The Daily Telegraph* and *New Scientist* on news stories related to my expertise (10 quotes). Interviews for *The Guardian Science podcast* (3 times); presenter for *The Guardian Events* and *New Scientist Live* (6 appearances).

2015 Writer, six appendices for third edition of Hawking’s *A Brief History of Time*.

2014 – present Visiting lecturer, *Royal College of Art*. Knowledge exchange with groups at the Information Experience Design which led to a major exhibition on cosmology in the Grizedale Forest (October 2018) funded by Royal Society and IoP.

2014 Writer and narrator for *TED-ED*: three part series on spacetime, receiving combined 1.7M views (as of Dec 2018).

2010 – 2014 Author of 5 popular articles for *New Scientist* and *BBC Focus Magazine*.

2012 – present Regular BBC radio and TV expert and occasional presenter; **more than 80 appearances** including on BBC2 *Stargazing Live*, BBC4 *Sky At Night*, BBC News Channel, BBC Radio 4 *Infinite Monkey Cage*, *More Or Less*, *Inside Science*, *Curious Cases of Rutherford and Fry*, BBC World Service *Crowd Science*, BBC Radio 5 Live *Science Night*, BBC Radio 2 *Chris Evans Show*. Additional occasional appearances for other media including *Channel 4*, *ABC* (Australia), *Al Jazeera* and *Brazil Globonews*. Combined reach of tens of millions of listeners and viewers.

2011 – present Regular presenter for science events, festivals and amateur astronomy groups; 60 talks total including for *Royal Institution*, *Royal Society Summer Science Exhibition*, *Greenwich Observatory*, *Wellcome Collection*, *British Science Festival*, *Cheltenham Science Festival*, *Edinburgh Science Festival*, and multitudinous local events and societies. One of my talks for the *Royal*

Institution was filmed and placed online and has now received 470,000 YouTube views (compared to a channel average of 20,000).

2006 – present

Regular presenter for widening participation school groups and for teacher professional development events including *The Princes Teaching Trust*, *A-Level Science Live*, *OCR*, *UCL Science Centre*, *Cambridge University Admissions Office* and *National Space Centre*, reaching a combined audience of more than 20,000 young disadvantaged people in person over 130 events.

List of publications

55 accepted or published refereed articles

1. Anderson, L.; Pontzen, A.; Font-Ribera, A.; Villaescusa-Navarro, F.; Rogers, K.K.; Genel, S. (2018). Cosmological hydrodynamic simulations with suppressed variance in the Lyman-alpha forest power spectrum. *Astrophysical Journal* (accepted for publication; pre-print [arXiv.org/abs/1811.00043](https://arxiv.org/abs/1811.00043))
2. Tremmel, M.; Quinn, T.; Ricarte, A.; Babul, A.; Chadayammuri, U.; Natarajan, P.; Nagai, D.; Pontzen, A.; Volonteri, M. (2018). Introducing RomulusC: a cosmological simulation of a galaxy cluster with unprecedented resolution. *Monthly Notices of the Royal Astronomical Society* (accepted for publication; pre-print arxiv.org/abs/1806.01282)
3. Villaescusa-Navarro, F.; Naess, S.; Genel, S.; Pontzen, A.; Wandelt, B.; Anderson, L.; Font-Ribera, A.; Battaglia, N.; Spergel, D.N. (2018). Statistical properties of paired fixed fields. *Astrophysical Journal*, 867, 137. doi: 10.3847/1538-4357/aae52b
4. Lucie-Smith, L.; Peiris, H.V.; Pontzen, A.; Lochner, M. (2018). Machine learning cosmological structure formation. *Monthly Notices of the Royal Astronomical Society*, 479, 3405. doi:10.1093/mnras/sty1719
5. Pontzen, A.; Tremmel, M. (2018) TANGOS: The Agile Numerical Galaxy Organization System. *Astrophysical Journal*, 237, 23. doi: 10.3847/1538-4365/aac832
6. Rogers, K.; Bird, S.; Peiris, H.V.; Pontzen, A.; Font-Ribera, A.; Leistedt, B. (2018). Correlations in the three-dimensional Lyman-alpha forest contaminated by high column density absorbers. *Monthly Notices of the Royal Astronomical Society*, 476, 3716. doi: 10.1093/mnras/sty603
7. Tremmel, M.; Governato, F.; Volonteri, M.; Quinn, T.; Pontzen, A. (2018). Dancing to CHANGA: a self-consistent prediction for close SMBH pair formation time-scales following galaxy mergers. *Monthly Notices of the Royal Astronomical Society*, 475, 4967. doi: 10.1093/mnras/sty139
8. Tremmel, M.; Governato, F.; Volonteri, M.; Pontzen, A.; Quinn, T. (2018). Wandering supermassive black holes in Milky-Way-mass halos. *Astrophysical Journal*, 857, 22. doi: 10.3847/2041-8213/aabc0a
9. Rogers, Keir K.; Bird, Simeon; Peiris, Hiranya V.; Pontzen, Andrew; Font-Ribera, Andreu; Leistedt, Boris (2018). Simulating the effect of high column density absorbers on the one-dimensional Lyman α forest flux power spectrum. *Monthly Notices of the Royal Astronomical Society*, 474, 3032. doi:10.1093/mnras/stx2942
10. Rey, M.; Pontzen, A. (2018). Quadratic genetic modifications: a streamlined route to cosmological simulations with controlled merger history. *Monthly Notices of the Royal Astronomical Society*, 474, 45. doi:10.1093/mnras/stx2744
11. Suarez, T.; Pontzen, A. (2017). Large-scale fluctuations in the cosmic ionizing background: the impact of beamed source emission. *Monthly Notices of the Royal Astronomical Society*, 472, 2643. doi: 10.1093/mnras/stx2104
12. Tremmel, M.; Karcher, M.; Governato, F.; Volonteri, M.; Quinn, T. R.; Pontzen, A.; Anderson, L.; Bellovary, J. (2017). The Romulus cosmological simulations: a physical approach to the formation,

- dynamics and accretion models of SMBHs. *Monthly Notices of the Royal Astronomical Society*, 470, 1121. doi:10.1093/mnras/stx1160
13. Di Cintio, A.; Tremmel, M.; Governato, F.; Pontzen, A.; Zavala, J.; Bastidas Fry, A.; Brooks, A.; Vogelsberger, M. (2017). A rumble in the dark: signatures of self-interacting dark matter in supermassive black hole dynamics and galaxy density profiles. *Monthly Notices of the Royal Astronomical Society*, 469, 2845. doi:10.1093/mnras/stx1043
 14. Cooper, A.; Cole, S.; Frenk, C. S.; Le Bret, T.; Pontzen, A. (2017). Comparing semi-analytic particle tagging and hydrodynamical simulations of the Milky Way's stellar halo. *Monthly Notices of the Royal Astronomical Society*, 469, 1691. doi:10.1093/mnras/stx955
 15. Le Bret, T.; Pontzen, A.; Cooper, A.; Frenk, C.S.; Zolotov, A.; Brooks, A.; Governato, F.; Parry, O. (2017). Particle tagging and its implications for stellar population dynamics. *Monthly Notices of the Royal Astronomical Society*, 468, 3212. doi:10.1093/mnras/stx552
 16. Pontzen, A.; Tremmel, M.; Roth, N.; Peiris, H.V.; Saintonge, A.; Volonteri, M.; Quinn, T.; Governato, F. (2017). How to quench a galaxy. *Monthly Notices of the Royal Astronomical Society*, 465, 547. doi: 10.1093/mnras/stw2627
 17. Rogers, K.; Peiris, H.; Leistedt, B.; McEwen, J.; Pontzen, A. (2016). Spin-SILC: CMB polarization component separation with spin wavelets. *Monthly Notices of the Royal Astronomical Society*, 463, 2310. doi: 10.1093/mnras/stw2128
 18. Angulo, R.E., Pontzen, A. (2016). Cosmological N-body simulations with suppressed variance. *Monthly Notices of the Royal Astronomical Society Letters* 462, L1 doi:10.1093/mnrasl/slw098
 19. Saadeh, D., Feeney, S.M., Pontzen, A., Peiris, H.V., McEwen, J.D.(2016). A framework for testing isotropy with the cosmic microwave background. *Monthly Notices of the Royal Astronomical Society*, 462, 1802. doi:10.1093/mnras/stw1731
 20. Suarez, T., Pontzen, A., Peiris, H.V., Slyz, A., Devriendt, J. (2016). Bursty star formation feedback and cooling outflows. *Monthly Notices of the Royal Astronomical Society* 462, 994 doi:10.1093/mnras/stw1670
 21. Saadeh, D., Feeney, S.M., Pontzen, A., Peiris, H.V., McEwen, J.D. (2016). How isotropic is the Universe?. *Physical Review Letters*, 117 131302-. doi:10.1103/PhysRevLett.117.131302
 22. Rogers, K.K., Peiris, H.V., Leistedt, B., McEwen, J.D., Pontzen, A. (2016). SILC: a new Planck Internal Linear Combination CMB temperature map using directional wavelets. *Monthly Notices of the Royal Astronomical Society* 460, 3014, doi:10.1093/mnras/stw1121
 23. Christensen, C.R., Dave, R., Governato, F., Pontzen, A., Brooks, A., Munshi, F., ...Wadsley, J. (2016). IN-N-OUT: the gas cycle from dwarves to spiral galaxies. *Astrophysical Journal*, 824, 57, doi: 10.3847/0004-637X/824/1/57
 24. Pontzen, A., Slosar, A., Roth, N., Peiris, H.V. (2016). Inverted initial conditions: Exploring the growth of cosmic structure and voids. *Physical Review D*, 93, 103519, doi:10.1103/PhysRevD.93.103519
 25. Roth, N., Pontzen, A., Peiris, H.V. (2016). Genetically modified haloes: towards controlled experiments in Lambda CDM galaxy formation. *Monthly Notices of the Royal Astronomical Society*, 455, 974. doi:10.1093/mnras/stv2375
 26. Fry, A.B., Governato, F., Pontzen, A., Quinn, T., Tremmel, M., Anderson, L., ...Wadsley, J. (2015). All about baryons: revisiting SIDM predictions at small halo masses. *Monthly Notices of the Royal Astronomical Society*, 452, 1468. doi:10.1093/mnras/stv1330
 27. Pontzen, A., Read, J.I., Teyssier, R., Governato, F., Gualandris, A., Roth, N., Devriendt, J. (2015). Milking the spherical cow - on aspherical dynamics in spherical coordinates. *Monthly Notices of the Royal Astronomical Society*, 451, 1366. doi:10.1093/mnras/stv1032

28. Governato, F., Weisz, D., Pontzen, A., Loebman, S., Reed, D., Brooks, A.M., ...Mayer, L. (2015). Faint dwarfs as a test of DM models: WDM versus CDM. *Monthly Notices of the Royal Astronomical Society*, 448, 792. doi:10.1093/mnras/stu2720
29. Marsh, D.J.E., Bull, P., Ferreira, P.G., Pontzen, A. (2014). Quintessence in a quandary: Prior dependence in dark energy models. *Physical Review D*, 90, 105023 doi:10.1103/PhysRevD.90.105023
30. Pontzen, A., Bird, S., Peiris, H., Verde, L. (2014). Constraints on ionizing photon production from the large-scale Lyman-alpha forest. *Astrophysical Journal Letters*, 792, 34 doi: 10.1088/2041-8205/792/2/L34
31. Pontzen, A. (2014). Scale-dependent bias in the BAO-scale intergalactic neutral hydrogen. *Physical Review D*, 89, 83010. doi:10.1103/PhysRevD.89.083010
32. Pontzen, A., Governato, F. (2014). Cold dark matter heats up. *Nature*, 506 (7487), 171-178. doi: 10.1038/nature12953
33. Leistedt, B., Peiris, H.V., Mortlock, D.J., Benoit-Levy, A., Pontzen, A. (2013). Estimating the large-scale angular power spectrum in the presence of systematics: a case study of Sloan Digital Sky Survey quasars. *Monthly Notices of the Royal Astronomical Society*, 435, 1857. doi:10.1093/mnras/stt1359
34. Robitaille, T.P. et al [45 authors including Pontzen, A.] (2013). Astropy: A community Python package for astronomy. *Astronomy & Astrophysics*, 558 doi:10.1051/0004-6361/201322068
35. Pontzen, A., Governato, F. (2013). Conserved actions, maximum entropy and dark matter haloes. *Monthly Notices of the Royal Astronomical Society*, 430, 121. doi:10.1093/mnras/sts529
36. Teysier, R., Pontzen, A., Dubois, Y., Read, J. (2013) Cusp-core transformations in dwarf galaxies: observational predictions. *Monthly Notices of the Royal Astronomical Society* doi:10.1093/mnras/sts563
37. Zolotov, A., Brooks, A.M., Willman, B., Governato, F., Pontzen, A., Christensen, C., ...Wadsley, J. (2012). Baryons Matter: Why Luminous Satellite Galaxies Have Reduced Central Masses. *Astrophysical Journal*, 761, 71. doi:10.1088/0004-637X/761/1/71
38. Peñarrubia, J., Pontzen, A., Walker, M.G., Koposov, S.E. (2012). The coupling between the core/cusp and missing satellite problems. *Monthly Notices of the Royal Astronomical Society Letters*, 759, 42 doi:10.1088/2041-8205/759/2/L42
39. Stinson, G., Brook, C., Prochaska, J.X., Hennawi, J., Pontzen, A., Shen, S., Macciò, A.V. (2012). MAGICC haloes: confronting simulations with observations of the circumgalactic medium at $z=0$. *Monthly Notices of the Royal Astronomical Society*, 425, 1270. doi:10.1111/j.1365-2966.2012.21522.x
40. Governato, F., Zolotov, A., Pontzen, A., Christensen, C., Oh, S.H., Brooks, A.M., ...Wadsley, J. (2012) Cuspy No More: How Outflows Affect the Central Dark Matter and Baryon Distribution in Lambda CDM Galaxies. *Monthly Notices of the Royal Astronomical Society*, 422, 1231. doi:10.1111/j.1365-2966.2012.20696.x
41. Pontzen, A., Governato, F. (2012). How supernova feedback turns dark matter cusps into cores. *Monthly Notices of the Royal Astronomical Society*, 421, 3464. doi:10.1111/j.1365-2966.2012.20571.x
42. Feeney, S.M., Peiris, H.V., Pontzen, A. (2011). Avoiding bias in reconstructing the largest observable scales from partial-sky data. *Physical Review D*, 84 103002, doi:10.1103/PhysRevD.84.103002
43. Pontzen, A., Challinor, A. (2010) .Linearization of homogeneous, nearly-isotropic cosmological models. *Classical and Quantum Gravity*, 28 185007. doi:10.1088/0264-9381/28/18/185007

44. Brook, C.B., Governato, F., Roskar, R., Stinson, G., Brooks, A., Wadsley, J., ...Pilkington, K. (2011). Hierarchical formation of bulgeless galaxies: Why outflows have low angular momentum. *Monthly Notices of the Royal Astronomical Society*, 415, 1051. doi:10.1111/j.1365-2966.2011.18545.x
45. Pontzen, A. (2010). Cosmology: small and large (2010). *The Observatory*, 130, 3, 192.
46. Pontzen, A., Peiris, H.V. (2010). The cut-sky cosmic microwave background is not anomalous. *Physical Review D*, 81 103008, doi:10.1103/PhysRevD.81.103008
47. Pontzen, A., Deason, A., Governato, F., Pettini, M., Wadsley, J., Quinn, T., ...Fynbo, J.P.U. (2009). The nature of HI absorbers in gamma-ray burst afterglows: clues from hydrodynamic simulations. *Monthly Notices of the Royal Astronomical Society*, 402 1523. doi:10.1111/j.1365-2966.2009.16017.x
48. Pontzen, A. (2009). Rogues' gallery: the full freedom of the Bianchi CMB anomalies. *Physical Review D*, 79 103518. doi:10.1103/PhysRevD.79.103518
49. Pontzen, A., Pettini, M. (2009). Dust Biasing of Damped Lyman Alpha Systems: a Bayesian Analysis. *Monthly Notices of the Royal Astronomical Society*, 393, 557. doi:10.1111/j.1365-2966.2008.14193.x
50. Pontzen, A., Governato, F., Pettini, M., Booth, C.M., Stinson, G., Wadsley, J., ...Haehnelt, M.(2008). Damped Lyman alpha systems in galaxy formation simulations. *Monthly Notices of the Royal Astronomical Society*, 390, 1349. doi:10.1111/j.1365-2966.2008.13782.x
51. Pontzen, A., Hewett, P., Carswell, R., Wild, V.(2007). Direct Observational Test Rules Out Small MgII Absorbers. *Monthly Notices of the Royal Astronomical Society Letters*, 381, 99 doi:10.1111/j.1745-3933.2007.00377.x
52. Pontzen, A., Challinor, A.(2007). Bianchi Model CMB Polarization and its Implications for CMB Anomalies. *Monthly Notices of the Royal Astronomical Society*, 380, 1387. doi:10.1111/j.1365-2966.2007.12221.x
53. Read, J.I., Goerdt, T., Moore, B., Pontzen, A.P., Stadel, J., Lake, G.(2006.). Dynamical friction in constant density cores: a failure of the Chandrasekhar formula. *Monthly Notices of the Royal Astronomical Society*, 373 1451. doi:10.1111/j.1365-2966.2006.11022.x
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