Curriculum Vitae

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Employment History

2008 – now	Director of Beecroft Institute of Particle Astrophysics and Cosmology (BIPAC), UK
2016 – now	Research Professor (RSIV) at the University of Oxford
2018 – now	Supernumerary Fellow Wolfson College
2008 – 2016	Professor of Astrophysics at the University of Oxford
2006 – 2008	Reader in Physics at the University of Oxford
2000 – 2006	Lecturer in Physics at University of Oxford
2000 – 2005	University Research Fellow of the Royal Society
2000 – 2016	Fellow and Tutor in Physics of Oriel College.
1999 – 2000	CERN Fellow, Theory Group, CERN, Geneva.
1995 – 1999	Postdoctoral Research Fellow, Centre for Particle Astrophysics, University of California at Berkeley, USA.

Education

1992 – 1995	PhD in Theoretical Physics, Imperial College, London, UK Advisor: Andreas Albrecht Topic: *Observational Consequences of Cosmological Phase Transitions*
1986 – 1991	Licenciatura in Physical Engineering, Instituto Superior Técnico, Lisbon, Portugal

Awards and membership of societies

2022	Gerald Whitrow Lecture of the Royal Astronomical Society
2016 – 2021	European Research Council Advanced Grant
2012 –	Associate visiting fellow (by invitation), Higgs Centre, Edinburgh, UK
2012 – 2013	Leverhulme Research Fellowship, UK
2010 – 2018	Fellow (by invitation) Institute of Physics (IoP)
2009 –	Member of Royal Astronomical Society (RAS)
2008 –	Associate Faculty of African Institute for Mathematical Sciences (by

	invitation)
2007	University Teaching Award
2004	Royal Society Merit Award
2002	ISI Science Watch, joint 2nd most cited scientist across all fields
2000 – 2005	Royal Society University Research Fellowship
1999	PPARC Advanced Fellowship (declined)
1994	Gulbenkian Foundation Fellowship (declined)

Grants

I am one of the founders and the director of the Beecroft Institute of Particle Astrophysics and Cosmology (BIPAC) which has attracted over €4.3M in private funding over the last 20 years to focus on theoretical and phenomenological aspects of cosmology.

- PI on ERC Advanced Grant (2016-2021)
- Co-I on STFC Consolidated Grant in Astrophysics (2012-present)
- PI on Oxford Martin School grant on Computational Challenges in Cosmology (2010-2015)
- PI on STFC Rolling Grant in Theoretical Cosmology (2007-2012)
- Co-I on STFC Standard Grant on Experimental Radio-Astronomy (2007-2012)
- Co-I on STFC Rolling Grant in Theoretical Cosmology (2004-2007)
- Co-I on Royal Society Networking Grant with UKZN, SA
- Co-I on Royal Society/CNRS network grant with University of Paris in Orsay
- Co-I on Leverhulme Grant on the nature of dark matter (2000-2003)
- PI on PPARC Standard Grant on the Statistics of the CMB (2002-2004)
- Co-I on Marie Curie Network on The Physics of the CMB CMBNET (2001-2005)
- Co-I (Oxford representative) on STFC grant for UK Cosmology Network
- Co-I (Oxford representative) on STFC COSMOS supercomputing grant
- Co-I on NASA ADS grant on statistical methods in the CMB COMBAT (1996-1998)

Professional Activities

- Member of European Advisory Board of Princeton University Press (2022-)
- Chair of FCT Physical Sciences Fellowships Panel, Portugal (2021-2022)
- Member of University Research Fellow Committee, Royal Society, UK (2012-2015)
- Member of International Network Committee, Royal Society, UK (2007- now)
- Member of senior faculty hiring committees, including the Savilian Professorship at Oxford (2000- now)
- Assessor for ERC consolidator and starting grants (2012-now)
- Member of Ernest Rutherford Grants Panel, STFC, UK (2013-2015)
- Member of Astronomy Working Group, ESA (2006-2009)
- Member of MPLS (Oxford) Communication Strategy Committee (2007-2008)
- Member of UK Space Sciences Advisory Committee (2006-2009)

- Member of Astronomy Grants Panel, STFC, UK (2006-2008)
- Evaluator, Marie Curie Fellowships, FP6, Brussels, Belgium (2002-2004)
- Member of Academic Committee in Physics, responsible for educational policy (2002-2005)
- Assessor for PPARC and STFC PDRA and Advanced Fellowships (2005- now)
- External reviewer for the US NSF and DOE, the CNRS, and the Austrian, Swiss, American, Canadian, Danish, Chilean, Norwegian, Polish, Portuguese, Israeli, German and Georgian Science Foundations (2000-now)
- Reviewer for Physical Review, Physics Letters, Journal of Cosmology and Astroparticle Physics, General Relativity and Gravitation, Classical and Quantum Gravity, Astrophysical Journal, Monthly Notices of the Royal Astronomical Society, Astronomy and Astrophysics (1995- now)
- External or internal examiner for approximately 70 PhD students in UK, Australia, USA, France, Switzerland, Norway, Finland, Spain, Sweden, Malta, Portugal and South Africa (2000- now)

Major Collaborations

- Member of LISA consortium (2018 – now)
- Member of Vera Rubin Observatory (LSST) collaboration (2015-now)
- Member of Core Cosmology Science Working Group for the SKA (2013-now)
- Member of Euclid collaboration (2011-now)
- Work Package Leader in Euclid Collaboration (2011- 2018)
- Member of CBASS collaboration (2010-2015)
- Member of FASTSOUND collaboration (2009-2013)
- Member of Weave collaborations (2009-2011)
- Member of QUIET collaboration (2006-2009)
- Member of CBI collaboration (2005-2008)
- Member of BOOMERanG collaboration (1997-2003)
- Member of MAXIMA collaboration (1997-2003)

Teaching and Mentoring (since 2000)

- Supervision of graduate students: Mario Santos (graduated 2002, faculty at UWC, Cape Town); Patricia Castro (2003, consultant for Capgemini); Chiara Caprini (2004, faculty CEA, Saclay); Jo Dunkley (2005, faculty Princeton), Caroline Zunckel (2007, currently faculty UKZN, Durban), Tom Zlosnik (2007, postdoc CEICO, Prague), David Sutton (2011, data scientist), David Marsh (2012, STFC ERF KCL), Edward Macaulay (2012, postdoc Portsmouth), Philip Bull (2013, faculty Manchester), Tessa Baker (2013, faculty QMUL), Danielle Leonard (2016, faculty Newcastle), Francesca von Brown-Bates (2017, civil service), James Scargill (2016, teacher), James Bonifacio (2017, faculty Mississippi), Macarena Lagos (2017, postdoc Columbia), Christiane Lorenz (2019, postdoc ETH Zurich), Oliver Tattersall (2019, civil service), Darsh Kodwani (2020, Accenture), Dina Traykov (2021, postdoc AEI Berlin), Deaghlan

Bartlett (2022, postdoc IAP), Jamie Bamber (expected graduation 2022), Jaime Zapatero (expected graduation 2023), James Marsden (expected graduation 2024)

- Supervision (and co-supervision) of postdocs: Martin Kunz (faculty at Geneva), Alessandro Melchiorri (faculty at Rome), Jamie Portsmouth (software engineer Autodesk), Dan Hooper (faculty Fermilab), Kavilan Moodley (faculty UKZN), Marian Douspis (now f Orsay), Constantino Skordis (faculty CEICO, Prague), Paolo Cabella, Joseph Zuntz (faculty, Edinburgh), Brad Johnson (faculty at Virginia), Tim Clifton (faculty at QMUL, London), Andrew Pontzen (faculty UCL), Julien Merten (Head of Data Science, Mercedes-Benz), Sigurd Naess (senior scientist CCA), Kate Land (co-founder of Havelock London), David Mota (faculty at Oslo), Armin Shafieloo (faculty at KASI), Anze Slosar (Senior Scientist at Brookhaven), Ingunn Wehus (faculty at Oslo), Thibaut Louis (CNRS researcher), Min Su-Shin (faculty at Seoul), Chris Gordon (faculty at Canterbury, NZ), Yohan Dubois (faculty at IAP Paris), Harley Katz (CTO of Probably Genetics), Krysztof Bolejko (faculty Tasmania), Sirichai Chongchitnan (faculty at Warwick), Johannes Noller (faculty Portsmouth), David Alonso (faculty Oxford), Hans Winther (faculty Oslo), Elisa Chisari (faculty Utrecht), Mark Richardson (Outreach officer at Queen's University), Giulia Cusin (faculty IAP, Paris), Katy Clough (faculty QMW), Harry Desmond (RS URF, Portsmouth), Carlos Garcia-Garcia.
- Supervision of undergraduate projects: Rosanna Hardwick, James Scargill, Bruno Balthazar, James Gundry, Peter Taylor, Harrison Manly, David Simon, Louis Davidson, Harvey Morris, Harry Shum.
- Taught at undergraduate level in the department of physics: coordinator and lecturer of 4th year Astrophysics major option, lecturer of 3rd year Astrophysics and Cosmology option (up to 2010), lecturer of (compulsory) 3rd year General Relativity and Cosmology course (upto 2015), lecturer of MMathPhys course in Cosmology, lecturer of Complex Analysis course. Tutored at Oriel college: 1st year mathematics, 2nd year mathematics, quantum mechanics, statistical mechanics, astrophysics, general relativity and cosmology. Taught at graduate level: introduction to the CMB and introduction to topological defects.

Publications

As of July 2023, according to Google Scholar, I currently have 34K citations with an average of 103 citations per paper (14K citations since 2018) with 13 papers with more than 500 citations and another 49 with more than 100 citations. My h-index is 76.

Peer Reviewed Publications

1) *Analytic marginalization over photometric redshift uncertainties in cosmic shear analyses*, J. Ruiz-Zapatero *et al*, MNRAS 522, 5037 (2023)
2) *Euclid: constraining linearly scale-independent modifications of gravity with the spectroscopic and photometric primary probes*, N, Frusciante *et al*, submitted to Astron. & Astroph. (2023)
3) *Relativistic drag forces on black holes from scalar dark matter clouds of all*

sizes, D. Traykova *et al*, submitted to Phys. Rev. D. (2023)

4) *On the functional form of the radial acceleration relation*, H. Desmond, D.J. Bartlett & P.G. Ferreira, MNRAS 521, 1817 (2023)
5) *Priors for Symbolic Regression*, D.J. Bartlett, H. Desmond & P.G. Ferreira, accepted to GECCO (2023)
6) *Exhaustive Symbolic Regression*, D.J. Bartlett, H. Desmond & P.G. Ferreira, IEEE (2023)
7) *Black hole merger simulations in wave dark matter environments*, J.C. Bamber, J.C. Aurrekoetxea, K. Clough & P.G. Ferreira, Phys. Rev. D 107, 024035 (2023)
8) *Combining cosmic shear data with correlated photo-z uncertainties: constraints from DESY1 and HSC-DR1*, C. Garcia-Garcia *et al*, JCAP 01, 025 (2023)
9) *New Horizons for fundamental physics with LISA*, K.G. Arun *et al*, Living Rev. in Relativity 25, 4 (2022)
10) *Euclid preparation. XXVII. Covariance model validation for the 2-point correlation function of galaxy clusters*, A. Fumagelli *et al*, submitted to Astron. & Astroph. (2022)
11) *Where is the ringdown: Reconstructing quasi-normal modes from dispersive waves,* J.C. Aurrekoetxea, P.G. Ferreira, K. Clough, E.A. Lim and O. Tattersall, Phys. Rev. D 106, 104002 (2022)
12) *The impact of the Universe's expansion rate on constraints on modified growth of structure*, J. Ruiz-Zapatero, D. Alonso, P.G. Ferreira and C. Garcia-Garcia, Phys. Rev. D 106, 083523 (2022)
13) *Euclid preparation – XIX. Impact of magnification on photometric galaxy clustering*, F. Lepori *et* al, Astron & Asroph. 662, 93 (2022)
14) *Euclid preparation – I. The Euclid Wide Survey*, R. Scaramella *et* al, Astron & Asroph. 662, 112 (2022)
15) *Model independent constraints on Ω_M and H(z) from the link between geometry and growth, MNRAS 512, 1967 (2002)*
16) *Euclid preparation – XVIII. The NISP photometric system*, M. Schirmer *et al,* Astron & Asroph. 662, A92 (2022)
17) *GRCHOMBO: an adaptable numerical relativity code for fundamental physics*, T. Andrade *et al*, The Journal of Open Source Software (2022)
18) *Euclid preparation – XV. Forecasting Cosmological Constraints for the Euclid and CMB joint analysis*, S. Ilic *et al,* Astron & Asroph. 657, 91 (2022)
19) *Testing Gravity on Cosmic Scales: A case study of Jordan-Brans-Dicke Theory,* S. Joudaki, P.G.Ferreira, N.A.Lima and H.A.Winther, Phys. Rev. D 105, 043522 (2022)
20) *Constraints on quantum gravity and the photon mass from gamma ray bursts*, D. Bartlett, H Desmond, P.G. Ferreira and J. Jasche, Phys. Rev. D 104, 103516 (2021)
21) *Constraints on equivalence principle violations from gamma ray bursts*, D. Bartlett, D. Bergsdal, H Desmond, P.G. Ferreira and J. Jasche, Phys. Rev. D 104, 084025 (2021)
22) *Quasinormal modes of growing dirty black holes*, J. Bamber, O. Tattersall, K. Clough and PG Ferreira, Phys. Rev. D 103, 124013 (2021)
23) *Dynamical friction from scalar dark matter in the relativistic regime*, D.

Traykova *et al*., Phys. Rev. D 104, 1031014 (2021)
24) *The growth of density perturbations in the last ~ 10 billions years from tomographic large scale structure data*, C. Garcia-Garcia *et al*, JCAP 10, 030 (2021)
25) *Theoretical priors in scalar-tensor cosmology: shift symmetric Horndeski models*, Phys. Rev. D 104, 083502 (2021)
26) *Growth of accretion driven scalar hair around Kerr black holes*, J. Bamber *et al,* Phys. Rev. D 103, 044059 (2021)
27) *Euclid preparation – XI. Mean redshift determination from galaxy redshift probabilities for cosmic shear tomography*, Euclid collaboration, Astron. & Astroph. 647, A117 (2021)
28) *Euclid preparation – XIV. The complete calibration of the color-redshift relation (c3R2) survey: data release 3*, SA Sanford *et al*, Astroph. Jour. Supp. 256, 9 (2021)
29) *R^2/Higgs Inflation and the Hierarchy Problem*, P.G. Ferreira, C. Hill, J. Noller and G. Ross, ArXiv:2018.06095 (2021)
30) *Calibrating Galaxy Formation Effectsin galactic tests of fundamental physics*, D. Bartlett, H. Desmond and PG Ferreira, Phys. Rev. D 103, 123502 (2021)
31) *Euclid preparation – IX. EuclidEmulator2 – Power spectrum emulation with massive neutrinos and self consistent dark energy perturbations*, Euclid collaboration, MNRAS 505, 2 (2021)
32) *Cosmic shear power spectra in practice,*, A. Nicola *et al,* JCAP 03, 067 (2021)
33) *Constraints on galileons from positions of supermassive black holes*, D.J. Bartlett, H. Desmond and P.G. Ferreira, Phys. Rev. D 103, 023523 (2021)
34) *Spatially offset black holes in the Horizon-AGN simulations and comparison to observations*, D.J. Bartlett, H. Desmond, J. Devriendt, P.G.Ferreira and A. Slyz, MNRAS, 500, 4639 (2021)
35) *Euclid preparation – X. The Euclid photometric-redshift challenge*, Euclid collaboration, Astron. & Astroph., 644, A31 (2020)
36) *Galaxy morphology rules out astrophysically relevant Hu-Sawicki f(R) gravity,* H. Desmond and P.G.Ferreira, Phys. Rev. D102, 10 104060 (2020)
37) *Euclid preparation – VIII. The complete calibration of the colour-redshift relation survey: VLT/KMOS observations and data release,* Euclid collaboration, Astron. & Astroph. 642, A192 (2020)
38) *Noise angular power spectrum of gravitational wave background experiments,* D. Alonso, C. Contaldi, G. Cusin, P.G. Ferreira and A. Renzini, Phys. Rev. D101, 124048 (2020)
39) *Theoretical priors in scalar-tensor cosmologies: thawing quintessence*, C. Garcia-Garcia, E. Bellini, P.G. Ferreira, D. Traykova and M. Zumalacárregui, Phys. Rev. D101, 063508 (2020)
40) *Detecting the anisotropic astrophysical gravitational wave background in the presences of shot noise through cross-correlations*, D. Alonso, G. Cusin, P.G. Ferreira, C. Pitrou, submitted to Phys. Rev. D (2020)
41) *Anomalous decay rate of quasinormal modes*, M. Lagos, P.G. Ferreira, O.J. Tattersall, Phys. Rev. D 101 084018 (2020)
42) *Scale invariant gravity and black hole ringdown*, P.G. Ferreira and O.J.

Tattersall, Phys. Rev. D101, 024011 (2020)
43) *Scale independent R2 inflation*, P.G. Ferreira, C.T. Hill, J. Noller and G.G. Ross, Phys. Rev. D100 123516 (2019)
44) *Testing self-interacting dark matter with galaxy warps*, K. Pardo, H. Desmond, P.G. Ferreira, Phys. Rev. D100 123006 (2019)
45) *Euclid preparation: VI. Verifying the Performance of Cosmic Shear Experiments*, P. Paykari *et al*, submitted to Astron. & Astroph. (2019)
46) *Growth of massive scalar hair around a Schwarzschild black hole*, K Clough, P.G. Ferreira, M. Lagos, Phys. Rev. D100, 063014 (2019)
47) *The Phenomenology of Beyond Horndeski gravity*, D. Traykova, E. Bellini, P.G. Ferreira, JCAP 2019, 035 (2019)
48) *Cosmological Tests of Gravity*, P.G. Ferreira, ARAA, 57, 335 (2019)
49) *Black holes, gravitational waves and fundamental physics: a roadmap*, L. Barack *et al*, Class. and Quan. Grav. 36, 143001 (2019)
50) *The Novel Probes Project – Tests of gravity on astrophysical scales*, T.Baker *et al*, Rev. Mod. Phys. 93 , 015003 (2019)
51) *Forecasts for low spin black hole spectroscopy in Horndeski gravity*, O. Tattersall and P.G.Ferreira, Phys. Rev. D99, 104082 (2019)
52) *Modelling baryonic feedback for survey cosmology*, N.E. Chisari *et al*, Open J. Astrophys., 2 ,4 (2019)
53) *The fifth force in the local cosmic web*, H. Desmond, P.G. Ferreira, G. Lavaux and J. Jasche, MNRAS 483, L64 (2019)
54) *Polarization of stochastic gravitational wave background through diffusion by massive structures*, G. Cusin, R. Durrer and P.G. Ferreira, Phys. Rev. D99, 023534 (2019)
55) *Inertial spontaneous symmetry breaking and quantum scale invariance*, P.G. Ferreira, C.T. Hill and G.G. Ross, Physical Review D 98, 116012 (2018)
56) *Cosmology and fundamental physics with the Euclid satellite*, L. Amendola *et al* (2018)
57) *The effect on cosmological parameter estimation of a parameter dependent covariance matrix*, D. Kodwani, D. Alonso and P.G. Ferreira, Open Journal of Astroph. Astro.1811.11584 (2018)
58) *Fifth force constraints from galaxy warps*, H. Desmond, P.G. Ferreira, G. Lavaux and J. Jasche, Phys. Rev. D98, 083010 (2018)
59) *Fifth force constraints from separation of galaxy mass components*, H. Desmond, P.G. Ferreira, G. Lavaux, J. Jasche, Phys. Rev. D98, 064015 (2018)
60) *Emergent dark energy from dark matter*, T. Kobayashi, P.G. Ferreira, Phys. Rev. D97, 121301 (2018)
61) *Inflation in a scale-invariant universe*, P.G. Ferreira, C.T. Hill, J. Noller, G.G. Ross, Phys. Rev. D97, 123516 (2018)
62) *Quasinormal modes of black holes in Horndeski gravity*, O.J. Tattersall and P.G. Ferreira, Phys. Rev. D97 104047 (2018)
63) *Speed of gravitational waves and black hole hair*, O.J. Tattersall, P.G. Ferreira and M. Lagos, Phys. Rev. D97, 084005 (2018)
64) *A general theory of linear cosmological perturbations: stability conditions, the quasistatic limit and dynamics*, M. Lagos, E. Bellini, J. Noller, P.G. Ferreira and

T. Baker, JCAP 2018, 021 (2018)

65) *Reconstructing the gravitational field of the local Universe*, H Desmond, P.G. Ferreira, G. Lavaux, J. Jasche, MNRAS, 474, 3152 (2018)
66) *General theories of linear gravitational perturbations to a Schwarzschild Black Hole*, O.J. Tattersall, P.G. Ferreira and M. Lagos, Phys. Rev. D97, 044021 (2018)
67) *Impact of relativistic effects on cosmological parameter estimation*, C.S. Lorenz, D. Alonso, P.G. Ferreira, Phys. Rev. D97, 023537 (2018)
68) *Comparison of Einstein-Boltzman solvers for testing general relativity*, E. Bellini *et al*, Phys. Rev. D97, 023520 (2018)
69) *Strong constraints on cosmological gravity from GW170817 and GRB170817A*, T. Baker *et al*, Phys. Rev. Lett. 119, 251301 (2017)
70) *Covariant approach to parametrized cosmological perturbations*, O.J. Tattersall, M. Lagos and P.G. Ferreira, Phys. Rev. D96, 064011 (2017)
71) *Cosmology of an infinite dimensional universe*, D. Sloan and P.G. Ferreira, Phys. Rev. D96, 043527 (2017)
72) *Hi_Class: Horndeski in the Cosmic Linear Anisotropy Solving System*, M. Zumalacárregui, E. Bellini, I. Sawicki, J. Lesgourgues, P.G. Ferreira, JCAP 2017, 019 (2017)
73) *Calibrating photometric redshifts with intensity mapping observations*, D. Alonso, P.G. Ferreira, M.J. Jarvis, K. Moodley, Phys. Rev. D95 064038 (2017)
74) *No fifth force in a scale invariant universe*, P.G. Ferreira, C.T. Hill, G.G. Ross, Phys. Rev. D95, 964038 (2017)
75) *Observational future of scalar-tensor theories*, D. Alonso, E. Bellini, P.G. Ferreira and M. Zumalacárregui, Phys. Rev. D95, 063502 (2017)
76) *Weyl Current, scale invariant inflation, and Planck scale generation*, P.G. Ferreira, C.T. Hill, G.G. Ross, Phys. Rev. D95, 043507 (2017)
77) *A general theory of linear cosmological perturbations: bimetric theories*, M. Lagos and P.G. Ferreira, JCAP 2017, 047 (2017)
78) *Scale-independent Inflation and the Hierarchy Generation*, P.G. Ferreira, C.T. Hill and G.G. Ross, Phys. Lett. B 763, 174 (2016)
79) *Reconstructing cosmic growth with kinetic Sunyaev-Zel'dovich observations in the era of stage IV experiments*, D. Alonso, T. Louis, P. Bull, P.G. Ferreira, Phys. Rev. D94, 043522 (2016)
80) *A general theory of linear cosmological perturbations: scalar-tensor and vector tensor theories*, M. Lagos, T. Baker, P.G. Ferreira and J. Noller, JCAP, 2016, 007 (2016)
81) *The Subaru FMOS galaxy redshift survey (FASTSOUND). IV. New constraint on gravity theory from redshift space distortions at z~1.4*, T. Okamur *et al*, PASJ 68, 38 (2016)
82) *On the phenomenology of extended Brans-Dicke theories*, N. Aguiar and P.G. Ferreira, JCAP 01 010 (2016)
83) *Testing gravity with E_G: mapping theory onto observations.* C.D. Leonard, P.G. Ferreira and C. Heymans, JCAP 1512, 051 (2015)
84) *Weak lensing of large scale structure in the presence of screening.* N. Tessore, H.A. Winther, R.B. Metcalfe, P.G. Ferreira and C. Giocoli, JCAP 1510, 036

(2015)

85) *Constraining ultra-large scale cosmology with multiple tracers in optical and radio surveys*, D. Alonso and P.G. Ferreira, Phys. Rev. D92, 063525 (2015)

86) *Ultra Large-Scale cosmology with next-generation experiments,* D. Alonso, P. Bull, P.G. Ferreira, R. Maartens, M. Santos, Astroph. Journ. 814, 145 (2015)

87) *The Vainhstein mechanism beyond the quasi-static approximation*, H. Winther, P.G. Ferreira, Phys. Rev. D92 064005 (2015)

88) *A CMB Gibbs sampler for localized secondary anisotropies*, P. Bull *et al*, Astroph. Journ. Suppl, 219, 10 (2015)

89) *The Subaru FMOS Galaxy Redshift Survey (FASTSOUND): Overview of the survey targeting on H-alpha emitters at z~1.4*, Tonegawa, M *et al* (with P.G. Ferreira) submitted to P.A.S.P. (2015)

90) *Testing General Relativity with current and future astrophysical observations,* E. Berti *et al* (with P.G. Ferreira), Class. Quant. Grav 32 243001 (2015)

91) *C-Band All-Sky Survey: a first look at the Galaxy,* M.O. Irfan *et al* (with P.G. Ferreira), Monthly Notices of the Royal Astronomical Society, 448, 3572 (2015)

92) *Exploring degeneracies in modified gravity with weak lensing,* D. Leonard, T. Baker, P.G.Ferreira, Phys. Rev. D91, 083504 (2015)

93) *TDiff and Weyl Invariant Massive Spin-2: Linear Theory*, J. Bonifacio, P.G.Ferreira, K. Hinterbichler, accepted to JCAP (2015)

94) *Fast route to nonlinear clustering statistics in modified gravity theories*, H.A. Winther and P.G. Ferreira, Phys. Rev. D91, 123507 (2015)

95) *A search for ultra-light axions using precision cosmological data,* R.Hlozek, D.Grin, D.J.E.Marsh, P.G.Ferreira, Phys. Rev. D91, 103512 (2015)

96) *Late time cosmology with 21 cm intensity mapping*, Astroph. Journ. 803, 21 (2015)

97) *Blind foreground subtraction for intensity mapping experiments*, D.Alonso, P.Bull, P.G.Ferreira and M.Santos, Monthly Notices of the Royal Astronomical Society, 447, 400 (2015)

98) *Accelerated expansion in the effective field theory of a radiation dominated universe*, B. Balthazar, P.G. Ferreira, Phys. Rev. D91, 061502 (2015)

99) *Cosmological perturbations in massive bigravity,* M. Lagos, P.G. Ferreira, JCAP 1412, 026 (2014)

100) *Cycles of interactions in multi-gravity theories,* J.H.Scargill, J.H.Noller, P.G.Ferreira, JHEP, 1412, 160 (2014)

101) *Quintessence in a quandary: prior dependence in dark energy models*, D.J.E.Marsh, P. Bull, P.G. Ferreira, A. Pontzen, Phys. Rev. D90, 105023 (2014)

102) *New gravitational scales in cosmological surveys*, T. Baker, P.G. Ferreira, D. Leonard M. Motta, Phys. Rev. D90, 124030 (2014)

103) *Fast simulations for intensity mapping experiments,* D. Alonso, P.G. Ferreira, M. Santos, Monthly Notices of the Royal Astronomical Society, 444, 3183 (2014)

104) *Tensor interpretation of BICEP2 results severely constrains axion dark matter*, Phys. Rev. Lett. 113, 011801 (2014)

105) *Interacting spin-2 fields in the Stuckelberg picture*, J.H. Noller, J. Scargill, P.G. Ferreira, JCAP, 1402, 007 (2014)

106) *Noether identities and gauge fixing the action for cosmological perturbations*, Phys. Rev. D89, 024304 (2014)
107) *Relativistic scalar fields and the quasi-static approximation in theories of modified gravity*, J. Noller, F. von Brown-Bates, P.G. Ferreira, Phys. Rev. D89, 023521 (2014)
108) *A fast route to modified gravitational growth*, T. Baker, P.G. Ferreira, C. Skordis, Phys. Rev D89, 024026 (2014)
109) *A few cosmological implications of tensor non-localities*, A. Maroto, P.G. Ferreira, Phys. Rev. D88, 123502 (2013)
110) *Cosmology on ultra-large scales with HI Intensity mapping- limits on primordial non-Gaussianity*, S. Camera, M. Santos, P.G. Ferreira, L. Ferramacho, Physical Review Letters. 111, 171302 (2013)
111) *The Parametrized Post-Friedmann framework for theories of modified gravity: concepts, formalism and examples*, T. Baker, P.G. Ferreira, C. Skordis, Physical Review D87, 024015 (2013)
112) *Axiverse cosmology and the energy scale of inflation*, D.J.E. Marsh, D. Grin, R. Hlozek, P. G. Ferreira, Physical Review D D87, 121701 (2013)
113) *Cosmology with Eddington inspired gravity*, J. Scargill, M. Banados, P.G. Ferreira, Physical Review D86, 103533 (2012)
114) *Power Spectrum Estimation from Peculiar Velocity Catalogues*, E. Macaulay, H.A. Feldman, P.G. Ferreira, A.H. Jaffe, S. Agarwal, M. J. Hudson, R. Watkins, Monthly Notices of the Royal Astronomical Society, 425, 1709 (2012)
115) *Cosmology and fundamental physics with the Euclid satellite*, L. Amendola *et al*, Living Reviews of Relativity 16, 6 (2013)
116) *Cosmology of axions and moduli: A dynamical systems approach,* D.J.E. Marsh, E.R. Tarrant, E.J. Copeland, P.G. Ferreira, Physical Review D86, 023508 (2012)
117) *A tensor instability in the Eddington inspired Born-Infeld theory of gravity*, C. Escamilla-Rivera, M. Banados, P.G. Ferreira, Physical Review D85, 087302 (2012)
118) *Ricci focusing, shearing and the expansion rate in an almost homogeneous universe*, K. Bolejko and P.G. Ferreira, Journal of Cosmology and Astroparticle Physics, 1205, 003 (2012)
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2) *Modified Gravity and Dark Energy models Beyond w(z) CDM testable by LSST*, M. Ishak *et al* (2019)
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6) *MeerKLASS: MeerKAT large area synoptic survey*, M.G. Santos *et al* (2017)
7) *Measuring baryon acoustic oscillations with future SKA surveys*, P. Bull *et al* (with P.G. Ferreira), "Advancing Astrophysics with the SKA" (2014)
8) *Cosmology with a SKA HI Intensity Mapping survey*, M.G. Santos *et al* (with P.G. Ferreira), "Advancing Astrophysics with the SKA" (2014)
9) *Cosmology on the largest scales with the SKA*, S.Camera *et al* (with P.G. Ferreira), "Advancing Astrophysics with the SKA" (2014)
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18) *A new golden age: testing general relativity with cosmology*, R. Bean, P.G. Ferreira, A. Taylor, Phil. Trans. Roy. Soc. A, 369, 4941 (2011)
19) *COrE (Cosmic Origins Explorer) A White Paper*, F. Bouchet *et al* (with P.G. Ferreira), submission to ESA call (2011)
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2) *A fresh look at Einstein's Prague period*, P.G. Ferreira, Nature 579, 23 (2020)
3) *Astronomy and the Future of General Relativity*, P.G. Ferreira, Sky & Telescope, December (2015)
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23) *The battle of black holes,* P.G. Ferreira, Guardian, 30th April (2005)
24) *Why Gödel was a hero to Einstein,* P.G. Ferreira, Physics World 18, 40 (2005)
25) *Challenges of cosmic proportion,* P.G. Ferreira, Physics World, 41 (2003)
26) *The quintessence of cosmology*, P.G. Ferreira, CERN courier, 39, 13 (1999)

<u>Books (non-technical)</u>

1) *I Am Because You Are*, Eds. P. Goldshmidt, T. Hershman, Freight Book (2015)
2) *The Perfect Theory: a century of geniuses and the battle over general relativity*, HMH (US), Little Brown (UK), C.H. Beck (Germany), Athenaeum-Polak & Van Gennep (Holland), Anagrama (Spain), Presença (Portugal), NHK (Japan), Kachi (Korea), Terra Cognita (Finland), Rizzoli (Italy), Proszynski Media (Poland) (2014)

3) *Cloud Choreography and other Emergent Systems,* Keith Tyson (introduction to catalogue) Koenig Books (2009)
4) *The State of the Universe: a primer*, Wiedenfield (UK), Presença (Portugal), H.S.T. Press (China)

Lectures and Seminars

Invited lectures and seminars (incomplete)

1) *Scalar Gravitational Waves and the Dark Universe*, Dark Side of the Universe conference, Kigali (2023)
2) *Cosmological Data Analysis for the 21st Century*, Large Scale Strucrure Workshop, Prague (2023)
3) *Is Dark Energy Unknowable?*, University of Geneva, Geneva (2023)
4) *From Cosmology to Ringdown*, Tests of Gravity Conference, Vancouver (2023)
5) *The Cosmic Chasm*, TUBITAK, Turkey (2021)
6) *Detecting Dark Energy with Black Hole Ringdown*, LAWOC, Rio de Janeiro (2020)
7) *Scale Invariant Gravity*, Gravity Workshop, IST, Lisbon (2019)
8) *Testing Gravity with Cosmology*, IST, Lisbon, October (2019)
9) *New Physics and Dark Energy,* VII Meeting on fundamental Cosmology, Madrid, September (2019)
10) *Relativistic Cosmology in the 21st Century*, Eddington Workshop, Principe, May (2019)
11) *General Relativity 100 years on,* Sciama Lecture, Trieste, October (2018)
12) *Black hole hair and gravitational waves,* Columbia University, April (2018)
13) *The ubiquity of the fifth force,* VCES, Vienna (2017)
14) *Scale Invariant Gravity*, Fine-tuning Workshop, Crete (2017)
15) *Tests of Gravity*, KASI workshop, Korea, April (2017)
16) *The state of inhomogeneity*, Workshop on backreaction, Cape Town, February (2017)
17) *Cosmological tests of gravity,* Tests of Gravity Workshop, Vancouver, January (2017)
18) *Relativistic Cosmology in the 21st Century*, University of British Columbia, January (2017)
19) *Cosmological tests of gravity,* Higgs Workshop, Edinburgh, January (2017)
20) *Testing Gravity with Cosmology,* Columbia University, May (2016)
21) *Relativistic Cosmology in the 21st Century,* Southampton University, December (2015)
22) *Relativistic Cosmology in the 21st Century,* University of Leiden, November (2015)
23) *Relativistic Cosmology in the 21st Century,* IAP, Paris, October (2015)
24) *Relativistic Cosmology in the 21st Century,* University of Cyprus, Cyprus, September (2015)
25) *Relativistic Cosmology in the 21st Century*, Albert Einstein Insitute, Hannover, July (2015)

26) *Relativistic Cosmology in the 21st Century*, Albert Einstein Insitute, Berlin, July (2015)
27) *General Relativity: a new golden age*, National Astronomy Meeting, Llanduddno, July (2015)
28) *Testing General Relativity with Cosmology*, Albert Einstein Insitute, Berlin, April (2015)
29) *Gravity and Lambda*, Beyond LCDM conference, Oslo, January (2015)
30) *One hundred years of general relativity*, Birmingham Physics, November (2014)
31) *The State of the Universe (circa 2014)*, Accelerator Physics Conference, RAL, Oxford, November (2014)
32) *The Graviton*, George Ellis Festschrift, UCT, Cape Town, November (2014)
33) *The Limits of Cosmology (panel)*, Templeton conference on fine-tuning in cosmology, Tenerife, September (2014)
34) *Testing General Relativity with Cosmology*, University of Amsterdam, April (2014)
35) *Testing General Relativity with Cosmology*, Pont D'Avignon, Cosmology Conference, April (2014)
36) *Gravity and Cosmology: A new golden age?*, University of Miami, Miami, April (2014)
37) *Measuring G*, Templeton Workshop on the Constants of Nature, Cambridge, March (2014)
38) *On Modified Gravity*, Templeton workshop, Oxford (2014)
39) *Cosmological constraints of General Relativity*, Testing GR with Astrophysical Observations, University of Mississippi, Oxford (Miss) January (2014)
40) *Testing General Relativity with Cosmology*, LMU, Munich, November (2013)
41) *Testing General Relativity with Cosmology*, Higgs Centre, Edinburgh (2013)
42) *Conformal Symmetry and Cosmology* (panel), Conformal Symmetry, Maths Institute, Oxford, September (2013)
43) *Testing General Relativity with Cosmology*, GRG symposium, Warsaw July (2013)
44) *Testing General Relativity with Cosmology*, Tales of Lambda, Nottingham, July (2013)
45) *Testing General Relativity with Cosmology*, Caltech, California, May (2013)
46) *Testing General Relativity with Cosmology*, University of Heidelberg, Heidelberg, May (2013)
47) *Testing General Relativity with Cosmology*, Catholic University (PUK), Chile, April (2013)
48) *Measuring the growth rate*, Journal club, ROE, Edinburgh, March (2013)
49) *Cosmological tests of gravity*, Strong Gravity Beyond GR, Lisbon, March (2013)
50) *The return of cosmological scalar fields*, Axion Cosmophysics. KEK, Tsukuba, November (2012)
51) *Testing General Relativity with Cosmology*, Cardiff University, Cardiff, October (2012)
52) *Testing General Relativity with Cosmology*, Liverpool John Moore University, Cardiff, September (2012)

53) *Testing General Relativity with Cosmology*, Institute of Physics, London, September (2012)
54) *Testing General Relativity with Cosmology*, COSMO-12, Beijing, September (2012)
55) *Testing General Relativity with Cosmology*, Spanish Relativity Conference, Guimarães, Portugal, Septmeber (2012)
56) *Testing General Relativity with Cosmology*, DAMTP, Cambridge, June (2012)
57) *Testing General Relativity with Cosmology*, Perimeter Institute, Waterloo, May (2012)
58) *Cosmological Tests of Gravity*, Testing Gravity with Astrophysical and Cosmological Observations, IPMU, Tokyo, January (2012)
59) *Cosmological Tests of Gravity,* University of Durham, Durham, UK January (2012)
60) *The cosmological landscape*, Lisa Pathfinder Workshop, Oxford, December (2011)
61) *Cosmological Tests of Gravity,* Imperial College, London, November (2011)
62) *Cosmological Tests of Gravity*, Oxford University, November (2011)
63) *Cosmological Tests of Gravity,* University of Hertfordshire, Herts, November (2011)
64) *Cosmological Lorentz Violation*, Lorentz Violation Workshop, Cambridge, October (2011)
65) *General Relativity: a new golden age?,* Royal Society Meeting, Chichester Hall, March (2011)
66) *The Dark Energy Hypothesis*, University of St Andrews, St Andrews, December (2009)
67) *The Dark Energy Hypothesis*, Southampton University, Southampton, November (2009)
68) *The Dark Energy Hypothesis*, Nottingham University, Nottingham, November (2009)
69) *The Dark Energy Hypothesis*, Edinburgh University, Edinburgh, November (2009)
70) *The Dark Energy Hypothesis*, New Worlds in Astroparticle Physics, São Tomé, September (2009)
71) *The Archipelagian Universe*, FXQI workshop, Warwickshire, July (2009)
72) *On modified gravity as an alternative to dark matter*, Chinese Academy of Sciences, Beijing , February (2009)
73) *The Dark Energy Hypothesis*, University of Birmingham, Birmingham, February (2009)
74) *The Dark Energy Hypothesis*, University of Sussex, Sussex, November (2008)
75) *The Dark Energy Hypothesis*, UFRJ, Rio de Janeiro, April (2008)
76) *The Dark Energy Hypothesis*, Indian Academy of Sciences, Hyderabad, India, March (2008)
77) *On modified gravity as an alternative to dark matter*, Institute of Astronomy, Cambridge , February (2008)
78) *On modified gravity as an alternative to dark matter*, Institute of Cosmology, Portsmouth , December (2007)

79) *On modified gravity as an alternative to dark matter*, University of Leeds, Leeds , November (2007)
80) *TeVeS and large scale structure*, University of Southampton, Southampton, November (2007)
81) *TeVeS as an alternative to dark matter*, Dark Matter workshop, Fermilab, May (2007)
82) *TeVeS as an alternative to dark matter*, UCL, London, November (2006)
83) *A gravitational solution to the dark matter problem*, Galilei Institute, Florence, October (2006)
84) *A gravitational solution to the dark matter problem*, Philosophy Department, Oxford, October (2006)
85) *A gravitational solution to the dark matter problem*, Imperial College, London May (2006)
86) *TeVeS and large scale structure*, Workshop on Modified Gravity, ROE, Edinburgh, April (2006)
87) *TeVeS and large scale structure*, UCT, Cape Town, March (2006)
88) *Initial Conditions of the Universe*, University of Nottingham, Nottingham, November (2005)
89) *Initial Conditions of the Universe*, ROE, Edinburgh, September (2005)
90) *Initial Conditions of the Universe*, UKZN, Durban, April (2005)
91) *Initial Conditions of the Universe*, University of Groningen, Netherlands, February (2005)
92) *Initial Conditions of the Universe*, University of Sheffield, November (2004)
93) *Initial Conditions of the Universe*, University of Sussex,, November (2004)
94) *Initial Conditions of the Universe*, UCL, London, October (2004)
95) *Initial Conditions of the Universe*, JENAM, Granada, September (2004)
96) *Initial Conditions of the Universe*, Ifrane University, Morocco, July (2004)
97) *Initial Conditions of the Universe*, Institute for Cosmology, Portsmouth, July (2004)
98) *Initial Conditions of the Universe*, Geneva University, Geneva, June (2004)
99) *Initial Conditions of the Universe,* Imperial College, London, May (2004)
100) *The State of the Universe,* Universidad Autonoma Madrid, Madrid, May (2004)
101) *The initial state of the universe*, University of Toulouse, Toulouse, April (2004)
102) *The initial state of the universe*, QMW, London, March (2004)
103) *The CMB and the state of the Universe*, KIAS, South Korea, February (2004)
104) *The Polarization of the CMB,* Polarization Workshop, Paris, May (2002)
105) *Measuring the geometry of the universe with the CMB*, University of Oxford, Oxford, November (2000)
106) *Measuring the geometry of the universe with the CMB*, UK Cosmology Network, Durham, September (2000)
107) *Measuring the geometry of the universe with the CMB*, DAMTP, Cambridge, September (2000)

108) *Measuring the geometry of the universe with the CMB*, SUSY 2000, CERN, Geneva, July (2000)
109) *Cosmology of a scaling scalar field*, Paris University Orsay, March (1999)
110) *Pairwise streaming velocities and constraints on Omega*, New Worlds in Astroparticle physics, Algarve, September (1999)
111) *The COBE data is non-Gaussian*, Modern Cosmology Conference, ICTP, Trieste July (1999)
112) *Cosmology of a scaling scalar field*, IAP, Paris, May (1998)
113) *Cosmology of a scaling scalar field*, Dark Matter Symposium, UCLA, March (1998)
114) *The COBE data is non-Gaussian*, 3K Cosmology, Rome, October (1998)
115) *Non-Gaussian spectra in the CMB,* 18th Texas Symposium, Chicago (1997)
116) *Cosmology of a scaling scalar field*, Fermilab, Batavia, November (1997)
117) *Topological defects and the CMB*, Harvard CfA, Boston, November (1994)
118) *Topological defects and the CMB*, MIT, Boston, November (1994)
119) *Topological defects and the CMB*, CfPA, Berkeley, November (1994)
120) *Topological defects and the CMB*, Fermilab, Batavia, November (1994)
121) *Cosmic Strings in an open universe*, Imperial College, London, June (1994)

Invited Lecture Courses

1) *Cosmological Gravity*, SAFIR, São Paulo (2021)
2) *Cosmological Gravity*, NORDITA Winter School, Stockholm (2020)
3) *Introduction to Cosmology*, Arab Astronomers Winter School, Marrakesh, November (2016)
4) *Cosmological Gravity,* Jaime Tiomno School of Cosmology, Rio de Janeiro, August (2016)
5) *The Current State of Cosmology*, School in Sub-Nuclear Physics, Erice, June (2015)
6) *The State of the Universe (circa 2014)*, Summer school in GR, Bad Honeff, September (2014)
7) *Lectures on modified gravity*, Summer School in Cosmology, Angra do Heroismo, Azores, June (2014)
8) *Lectures on modified gravity*, Essential Cosmology for the next generation, Cancun, Mexico January (2014)
9) *The Physics of the Cosmic Microwave Background,* SISSA, Trieste, Italy, April (2007)
10) *An introduction to astrophysics and cosmology*, AIMS, Cape Town, January (2006)
11) *An introduction to astrophysics and cosmology*, AIMS, Cape Town, January (2005)

12) *The Physics of the Cosmic Microwave Background,* Cosmology with the CMB, L'Aquila, Italy, June (2005)
13) *The Physics of the Cosmic Microwave Background,* ISYA course in Astrophysics, Ifrane, Morocco, July (2004)
14) *The Physics of the Cosmic Microwave Background,* KIAS, Seoul, South Korea, February (2004)
15) *An introduction to astrophysics and cosmology*, AIMS, Cape Town, January (2004)
16) *The Physics of the Cosmic Microwave Background,* Summer school in cosmology, Lake Balaton, Hungary, July (2003)
17) *The Physics of the Cosmic Microwave Background,* Troisieme Cycle, Lausanne, Switzerland, May (2003)

Public lectures

1) *Cosmic Ignorance*, Gerald Whitrow Lecture, RAS (2022)
2) *The Perfect Theory,* City of Science, Valencia, January (2019)
3) *Dark Energy*, Pioneerworks, Brooklyn, November (2018)
4) *The Perfect Theory,* Science and Society, Gulbenkian, Lisbon (2018)
5) *The Perfect Theory,* Portuguese High School Teacher Convention, Lisbon (2017)
6) *Einstein and his Science*, Jewish Book Week, February (2016)
7) *The Perfect Theory*, Friends of Imperial, December (2015)
8) *The Perfect Theory,* University of Nottingham, November (2015)
9) *The Perfect Theory,* University of Portsmouth, November (2015)
10) *The Perfect Theory,* Waterstones Bookstore, Oxford, September (2015)
11) *The Perfect Theory*, Chemical and Physical Society, UCL London, March (2015)
12) *The Perfect Theory panel discussions*, TORCH, Oxford, March (2015)
13) *The Perfect Theory*, Oslo University Library, Oslo, January (2015)
14) *The Perfect Theory*, Howto Academy, London, November (2014)
15) *The Perfect Theory*, Ilkley Book Festival, Ilkley, October (2014)
16) *The Perfect Theory*, Words on Walden, Ilkley, October (2014)
17) *The Perfect Theory*, Ways with Words, Dartington, July (2014)
18) *The Perfect Theory,* interview by Marcus de Sautoy, LRB Bookstore, London July (2014)
19) *The Perfect Theory,* Festival of ideas, Bristol June (2014)
20) *The Perfect Theory,* Words by the Water, Keswik, March (2014)
21) *The Next Big Thing*, FutureFest, London, September (2013)
22) *Art and Science* (with Jem Finer and Sian Ede), Gravity Fields Festival, Grantham, September (2012)
23) *The centre of the universe,* OCEI, Oxford, March (2013)
24) *On time*, University of Lisbon, Lisbon, May (2012)
25) *On science* (panel discussion)I, LSE literary festival, London, March (2012)
26) *The Problem of Time*, Science Museum, Oxford, November (2011)
27) *Big Data in Cosmology*, World Economic Forum, Dalian, China, September (2011)
28) *Extra Terrestrial Life* (panel), Oxford Literary Festival, Oxford, April (2011)

29) *Computational Challenges in Cosmology*, Royal Society, London, December (2010)
30) *Art & Science* (debate), Oxford Art Week, Oxford, May (2010)
31) *On Beauty in Mathematics*, Parasol Unit Gallery, London, October (2009)
32) *The centre of the universe*, Lisbon University, Lisbon, August (2009)
33) *Eddington's Expedition to Príncipe,* São Tomé e Príncipe, May (2009)
34) *Eddington's Expedition to Príncipe,* Geographic Society, Lisbon, May (2009)
35) *The State of the Universe*, Rotary Club, Woodstock, Oxfordshire, November (2007)
36) *The expanding universe,* San Francisco Planetarium, San Francisco, March (1996)
37) *The Beginning of the Universe*, Louder than Words workshop, London, March (1994)