

DiRAC Publications 2018

dp002: The COSMOS Consortium: Fundamental Cosmology and the Origin of Structure in the Universe

PI: Prof. Paul Shellard

Science Area: Astronomy & Astrophysics

Institute: University of Cambridge

Exploring cosmic origins with CORE: Inflation

F. Finelli, M. Bucher, A. Achúcarro, et al.

2018, JCAP, [10.1088/1475-7516/2018/04/016](https://doi.org/10.1088/1475-7516/2018/04/016)

Stirring a black hole

J. Markevičiūtė and J. E. Santos

2018, JHEP, [10.1007/JHEP02\(2018\)060](https://doi.org/10.1007/JHEP02(2018)060)

Searching for light relics with large-scale structure

D. Baumann, D. Green, and B. Wallisch

2018, JCAP, [10.1088/1475-7516/2018/08/029](https://doi.org/10.1088/1475-7516/2018/08/029)

Breakthrough revisited: investigating the requirements for growth of dust beyond the bouncing barrier

R. A. Booth, F. Meru, M. H. Lee, et al.

2018, MNRAS, [10.1093/mnras/stx3084](https://doi.org/10.1093/mnras/stx3084)

Self-shielding of hydrogen in the IGM during the epoch of reionization

J. Chardin, G. Kulkarni, and M. G. Haehnelt

2018, MNRAS, [10.1093/mnras/sty992](https://doi.org/10.1093/mnras/sty992)

Robustness of inflation to large tensor perturbations

K. Clough, R. Flauger, and E. A. Lim

2018, JCAP, [10.1088/1475-7516/2018/05/065](https://doi.org/10.1088/1475-7516/2018/05/065)

A new measurement of the intergalactic temperature at $z \sim 2.55$ -2.95

A. Rorai, R. F. Carswell, M. G. Haehnelt, et al.

2018, MNRAS, [10.1093/mnras/stx2862](https://doi.org/10.1093/mnras/stx2862)

Lyman- α emitters gone missing: the different evolution of the bright and faint populations

L. H. Weinberger, G. Kulkarni, M. G. Haehnelt, et al.

2018, MNRAS, [10.1093/mnras/sty1563](https://doi.org/10.1093/mnras/sty1563)

Formation of relativistic axion stars

J. Y. Widdicombe, T. Helfer, D. J. E. Marsh, et al.

2018, JCAP, [10.1088/1475-7516/2018/10/005](https://doi.org/10.1088/1475-7516/2018/10/005)

dp004: VIRGO Consortium
PI: Prof. Carlos Frenk
Science Area: Astronomy & Astrophysics
Institute: Durham University

Faraday rotation maps of disc galaxies

R. Pakmor, T. Guillet, C. Pfrommer, et al.
2018, MNRAS, [10.1093/mnras/sty2601](https://doi.org/10.1093/mnras/sty2601)

Uncovering substructure with wavelets: proof of concept using Abell 2744

J. Schwinn, C. M. Baugh, M. Jauzac, et al.
2018, MNRAS, [10.1093/mnras/sty2566](https://doi.org/10.1093/mnras/sty2566)

The PAU Survey: spectral features and galaxy clustering using simulated narrow-band photometry

L. Stothert, P. Norberg, C. M. Baugh, et al.
2018, MNRAS, [10.1093/mnras/sty2491](https://doi.org/10.1093/mnras/sty2491)

The rapid growth phase of supermassive black holes

S. McAlpine, R. G. Bower, D. J. Rosario, et al.
2018, MNRAS, [10.1093/mnras/sty2489](https://doi.org/10.1093/mnras/sty2489)

Ring galaxies in the EAGLE hydrodynamical simulations

A. Elagali, C. D. P. Lagos, O. I. Wong, et al.
2018, MNRAS, [10.1093/mnras/sty2462](https://doi.org/10.1093/mnras/sty2462)

Growing a ‘cosmic beast’: observations and simulations of MACS J0717.5+3745

M. Jauzac, D. Eckert, M. Schaller, et al.
2018, MNRAS, [10.1093/mnras/sty2366](https://doi.org/10.1093/mnras/sty2366)

Dynamical cluster disruption and its implications for multiple population models in the E-MOSAICS simulations

M. Reina-Campos, J. M. D. Kruijssen, J. Pfeffer, et al.
2018, MNRAS, [10.1093/mnras/sty2451](https://doi.org/10.1093/mnras/sty2451)

Aurigaia: mock Gaia DR2 stellar catalogues from the AURIGA cosmological simulations

R. J. J. Grand, J. Helly, A. Fattahi, et al.
2018, MNRAS, [10.1093/mnras/sty2403](https://doi.org/10.1093/mnras/sty2403)

N-body simulations of structure formation in thermal inflation cosmologies

M. Leo, C. M. Baugh, B. Li, et al.
2018, JCAP, [10.1088/1475-7516/2018/12/010](https://doi.org/10.1088/1475-7516/2018/12/010)

The multiphase circumgalactic medium traced by low metal ions in EAGLE zoom simulations

B. D. Oppenheimer, J. Schaye, R. A. Crain, et al.
2018, MNRAS, [10.1093/mnras/sty2281](https://doi.org/10.1093/mnras/sty2281)

The Cosmic Ballet: spin and shape alignments of haloes in the cosmic web

P. Ganeshaiyah Veena, M. Cautun, R. van de Weygaert, et al.

2018, MNRAS, [10.1093/mnras/sty2270](https://doi.org/10.1093/mnras/sty2270)

Globular clusters versus dark matter haloes in strong lensing observations

Q. He, R. Li, S. Lim, et al.

2018, MNRAS, [10.1093/mnras/sty2260](https://doi.org/10.1093/mnras/sty2260)

A physical model for the spectral-timing properties of accreting black holes

R. D. Mahmoud and C. Done

2018, MNRAS, [10.1093/mnras/sty2133](https://doi.org/10.1093/mnras/sty2133)

The origin of the ‘blue tilt’ of globular cluster populations in the E-MOSAICS simulations

C. Usher, J. Pfeffer, N. Bastian, et al.

2018, MNRAS, [10.1093/mnras/sty1895](https://doi.org/10.1093/mnras/sty1895)

Theoretical predictions for IMF diagnostics in UV spectroscopy of star clusters

G. Ashworth, M. Fumagalli, A. Adamo, et al.

2018, MNRAS, [10.1093/mnras/sty2058](https://doi.org/10.1093/mnras/sty2058)

Deviations from hydrostatic equilibrium in the circumgalactic medium: spinning hot haloes and accelerating flows

B. D. Oppenheimer

2018, MNRAS, [10.1093/mnras/sty1918](https://doi.org/10.1093/mnras/sty1918)

Measurement of the primordial helium abundance from the intergalactic medium

R. J. Cooke and M. Fumagalli

2018, NatAs, [10.1038/s41550-018-0584-z](https://doi.org/10.1038/s41550-018-0584-z)

Weak lensing by voids in weak lensing maps

C. T. Davies, M. Cautun, and B. Li

2018, MNRAS, [10.1093/mnras/sly135](https://doi.org/10.1093/mnras/sly135)

The environment of radio galaxies: a signature of AGN feedback at high redshifts

D. Izquierdo-Villalba, Á. A. Orsi, S. Bonoli, et al.

2018, MNRAS, [10.1093/mnras/sty1941](https://doi.org/10.1093/mnras/sty1941)

Cosmic CARNage II: the evolution of the galaxy stellar mass function in observations and galaxy formation models

R. Asquith, F. R. Pearce, O. Almaini, et al.

2018, MNRAS, [10.1093/mnras/sty1870](https://doi.org/10.1093/mnras/sty1870)

Calibrated, cosmological hydrodynamical simulations with variable IMFs I: method and effect on global galaxy scaling relations

C. Barber, R. A. Crain, and J. Schaye

2018, MNRAS, [10.1093/mnras/sty1826](https://doi.org/10.1093/mnras/sty1826)

Marked clustering statistics in $f(R)$ gravity cosmologies

C. Hernández-Aguayo, C. M. Baugh, and B. Li
2018, MNRAS, [10.1093/mnras/sty1822](https://doi.org/10.1093/mnras/sty1822)

The Missing Satellite Problem Outside of the Local Group. I. Pilot Observation
M. Tanaka, M. Chiba, K. Hayashi, et al.
2018, ApJ, [10.3847/1538-4357/aad9fe](https://doi.org/10.3847/1538-4357/aad9fe)

SEAGLE - I. A pipeline for simulating and modelling strong lenses from cosmological hydrodynamic simulations
S. Mukherjee, L. V. E. Koopmans, R. B. Metcalf, et al.
2018, MNRAS, [10.1093/mnras/sty1741](https://doi.org/10.1093/mnras/sty1741)

Galaxy tagging: photometric redshift refinement and group richness enhancement
P. R. Kaffé, A. S. G. Robotham, S. P. Driver, et al.
2018, MNRAS, [10.1093/mnras/sty1536](https://doi.org/10.1093/mnras/sty1536)

The total satellite population of the Milky Way
O. Newton, M. Cautun, A. Jenkins, et al.
2018, MNRAS, [10.1093/mnras/sty1085](https://doi.org/10.1093/mnras/sty1085)

Cosmological constraints from Fourier phase statistics
K. Ali, D. Obreschkow, C. Howlett, et al.
2018, MNRAS, [10.1093/mnras/sty1696](https://doi.org/10.1093/mnras/sty1696)

CEMPLifying reionization
M. Sharma, T. Theuns, and C. Frenk
2018, MNRAS, [10.1093/mnras/sty1319](https://doi.org/10.1093/mnras/sty1319)

Evolution of LMC/M33-mass dwarf galaxies in the EAGLE simulation
S. Shao, M. Cautun, A. J. Deason, et al.
2018, MNRAS, [10.1093/mnras/sty1470](https://doi.org/10.1093/mnras/sty1470)

Rise of the first supermassive stars
J. A. Regan and T. P. Downes
2018, MNRAS, [10.1093/mnras/sty1289](https://doi.org/10.1093/mnras/sty1289)

AutoLens: automated modeling of a strong lens's light, mass, and source
J. W. Nightingale, S. Dye, and R. J. Massey
2018, MNRAS, [10.1093/mnras/sty1264](https://doi.org/10.1093/mnras/sty1264)

The three phases of galaxy formation
B. Clauwens, J. Schaye, M. Franx, et al.
2018, MNRAS, [10.1093/mnras/sty1229](https://doi.org/10.1093/mnras/sty1229)

Testing modified gravity using a marked correlation function
J. Armijo, Y.-C. Cai, N. Padilla, et al.
2018, MNRAS, [10.1093/mnras/sty1335](https://doi.org/10.1093/mnras/sty1335)

Localized massive halo properties in BAHAMAS and MACSIS simulations: scalings,

lognormality, and covariance

A. Farahi, A. E. Evrard, I. McCarthy, et al.
2018, MNRAS, [10.1093/mnras/sty1179](https://doi.org/10.1093/mnras/sty1179)

Nonlinear growth of structure in cosmologies with damped matter fluctuations

M. Leo, C. M. Baugh, B. Li, et al.
2018, JCAP, [10.1088/1475-7516/2018/08/001](https://doi.org/10.1088/1475-7516/2018/08/001)

The Imprint of Cosmic Reionization on the Luminosity Function of Galaxies

S. Bose, A. J. Deason, and C. S. Frenk
2018, ApJ, [10.3847/1538-4357/aacbc4](https://doi.org/10.3847/1538-4357/aacbc4)

Resolution of the apparent discrepancy between the number of massive subhaloes in Abell 2744 and Λ CDM

T.-X. Mao, J. Wang, C. S. Frenk, et al.
2018, MNRAS, [10.1093/mnrasl/sly069](https://doi.org/10.1093/mnrasl/sly069)

Quenching and ram pressure stripping of simulated Milky Way satellite galaxies

C. M. Simpson, R. J. J. Grand, F. A. Gómez, et al.
2018, MNRAS, [10.1093/mnras/sty774](https://doi.org/10.1093/mnras/sty774)

The impact of feedback and the hot halo on the rates of gas accretion on to galaxies

C. A. Correa, J. Schaye, F. van de Voort, et al.
2018, MNRAS, [10.1093/mnras/sty871](https://doi.org/10.1093/mnras/sty871)

The origin of diverse α -element abundances in galaxy discs

J. T. Mackereth, R. A. Crain, R. P. Schiavon, et al.
2018, MNRAS, [10.1093/mnras/sty972](https://doi.org/10.1093/mnras/sty972)

Degradation analysis in the estimation of photometric redshifts from non-representative training sets

J. D. Rivera, B. Moraes, A. I. Merson, et al.
2018, MNRAS, [10.1093/mnras/sty880](https://doi.org/10.1093/mnras/sty880)

The shape of galaxy dark matter haloes in massive galaxy clusters: insights from strong gravitational lensing

M. Jauzac, D. Harvey, and R. Massey
2018, MNRAS, [10.1093/mnras/sty909](https://doi.org/10.1093/mnras/sty909)

The impact of dark energy on galaxy formation. What does the future of our Universe hold?

J. Salcido, R. G. Bower, L. A. Barnes, et al.
2018, MNRAS, [10.1093/mnras/sty879](https://doi.org/10.1093/mnras/sty879)

Galaxy formation efficiency and the multiverse explanation of the cosmological constant with EAGLE simulations

L. A. Barnes, P. J. Elahi, J. Salcido, et al.
2018, MNRAS, [10.1093/mnras/sty846](https://doi.org/10.1093/mnras/sty846)

Consequences of Giant Impacts on Early Uranus for Rotation, Internal Structure, Debris, and Atmospheric Erosion

J. A. Kegerreis, L. F. A. Teodoro, V. R. Eke, et al.

2018, ApJ, [10.3847/1538-4357/aac725](https://doi.org/10.3847/1538-4357/aac725)

A general framework to test gravity using galaxy clusters - I. Modelling the dynamical mass of haloes in $f(R)$ gravity

M. A. Mitchell, J.-h. He, C. Arnold, et al.

2018, MNRAS, [10.1093/mnras/sty636](https://doi.org/10.1093/mnras/sty636)

Dark matter dynamics in Abell 3827: new data consistent with standard cold dark matter

R. Massey, D. Harvey, J. Liesenborgs, et al.

2018, MNRAS, [10.1093/mnras/sty630](https://doi.org/10.1093/mnras/sty630)

What to expect from dynamical modelling of galactic haloes - II. The spherical Jeans equation

W. Wang, J. Han, S. Cole, et al.

2018, MNRAS, [10.1093/mnras/sty706](https://doi.org/10.1093/mnras/sty706)

Dynamical Constraints on the Dark Matter Distribution of the Sculptor Dwarf Spheroidal from Stellar Proper Motions

L. E. Strigari, C. S. Frenk, and S. D. M. White

2018, ApJ, [10.3847/1538-4357/aac2d3](https://doi.org/10.3847/1538-4357/aac2d3)

The diverse density profiles of galaxy clusters with self-interacting dark matter plus baryons

A. Robertson, R. Massey, V. Eke, et al.

2018, MNRAS, [10.1093/mnrasl/sly024](https://doi.org/10.1093/mnrasl/sly024)

Tidal stripping and the structure of dwarf galaxies in the Local Group

A. Fattahi, J. F. Navarro, C. S. Frenk, et al.

2018, MNRAS, [10.1093/mnras/sty408](https://doi.org/10.1093/mnras/sty408)

The innate origin of radial and vertical gradients in a simulated galaxy disc

J. F. Navarro, C. Yozin, N. Loewen, et al.

2018, MNRAS, [10.1093/mnras/sty497](https://doi.org/10.1093/mnras/sty497)

The Santiago-Harvard-Edinburgh-Durham void comparison - I. SHEDding light on chameleon gravity tests

M. Cautun, E. Paillas, Y.-C. Cai, et al.

2018, MNRAS, [10.1093/mnras/sty463](https://doi.org/10.1093/mnras/sty463)

The BAHAMAS project: the CMB-large-scale structure tension and the roles of massive neutrinos and galaxy formation

I. G. McCarthy, S. Bird, J. Schaye, et al.

2018, MNRAS, [10.1093/mnras/sty377](https://doi.org/10.1093/mnras/sty377)

Bars in dark-matter-dominated dwarf galaxy discs

A. Marasco, K. A. Oman, J. F. Navarro, et al.
2018, MNRAS, [10.1093/mnras/sty354](https://doi.org/10.1093/mnras/sty354)

The multiplicity and anisotropy of galactic satellite accretion
S. Shao, M. Cautun, C. S. Frenk, et al.
2018, MNRAS, [10.1093/mnras/sty343](https://doi.org/10.1093/mnras/sty343)

Two peculiar fast transients in a strongly lensed host galaxy
S. A. Rodney, I. Balestra, M. Bradac, et al.
2018, NatAs, [10.1038/s41550-018-0405-4](https://doi.org/10.1038/s41550-018-0405-4)

Fragmentation inside atomic cooling haloes exposed to Lyman-Werner radiation
J. A. Regan and T. P. Downes
2018, MNRAS, [10.1093/mnras/sty134](https://doi.org/10.1093/mnras/sty134)

The E-MOSAICS project: simulating the formation and co-evolution of galaxies and their star cluster populations
J. Pfeffer, J. M. D. Kruijssen, R. A. Crain, et al.
2018, MNRAS, [10.1093/mnras/stx3124](https://doi.org/10.1093/mnras/stx3124)

Cosmic CARNage I: on the calibration of galaxy formation models
A. Knebe, F. R. Pearce, V. Gonzalez-Perez, et al.
2018, MNRAS, [10.1093/mnras/stx3274](https://doi.org/10.1093/mnras/stx3274)

A new smooth-k space filter approach to calculate halo abundances
M. Leo, C. M. Baugh, B. Li, et al.
2018, JCAP, [10.1088/1475-7516/2018/04/010](https://doi.org/10.1088/1475-7516/2018/04/010)

Identifying the subtle signatures of feedback from distant AGN using ALMA observations and the EAGLE hydrodynamical simulations
J. Scholtz, D. M. Alexander, C. M. Harrison, et al.
2018, MNRAS, [10.1093/mnras/stx3177](https://doi.org/10.1093/mnras/stx3177)

Galactic conformity measured in semi-analytic models
I. Lacerna, S. Contreras, R. E. González, et al.
2018, MNRAS, [10.1093/mnras/stx3253](https://doi.org/10.1093/mnras/stx3253)

A new gas cooling model for semi-analytic galaxy formation models
J. Hou, C. G. Lacey, and C. S. Frenk
2018, MNRAS, [10.1093/mnras/stx3218](https://doi.org/10.1093/mnras/stx3218)

Flickering AGN can explain the strong circumgalactic O VI observed by COS-Halos
B. D. Oppenheimer, M. Segers, J. Schaye, et al.
2018, MNRAS, [10.1093/mnras/stx2967](https://doi.org/10.1093/mnras/stx2967)

The host dark matter haloes of [O II] emitters at $0.5 < z < 1.5$
V. Gonzalez-Perez, J. Comparat, P. Norberg, et al.
2018, MNRAS, [10.1093/mnras/stx2807](https://doi.org/10.1093/mnras/stx2807)

The Cluster-EAGLE project: velocity bias and the velocity dispersion-mass relation of cluster galaxies

T. J. Armitage, D. J. Barnes, S. T. Kay, et al.
2018, MNRAS, [10.1093/mnras/stx3020](https://doi.org/10.1093/mnras/stx3020)

Origin of chemically distinct discs in the Auriga cosmological simulations

R. J. J. Grand, S. Bustamante, F. A. Gómez, et al.
2018, MNRAS, [10.1093/mnras/stx3025](https://doi.org/10.1093/mnras/stx3025)

Galaxy-galaxy weak gravitational lensing in f(R) gravity

B. Li and M. Shirasaki
2018, MNRAS, [10.1093/mnras/stx3006](https://doi.org/10.1093/mnras/stx3006)

Reducing biases on H_0 measurements using strong lensing and galaxy dynamics: results from the EAGLE simulation

A. S. Tagore, D. J. Barnes, N. Jackson, et al.
2018, MNRAS, [10.1093/mnras/stx2965](https://doi.org/10.1093/mnras/stx2965)

Supercluster simulations: impact of baryons on the matter power spectrum and weak lensing forecasts for Super-CLASS

A. Peters, M. L. Brown, S. T. Kay, et al.
2018, MNRAS, [10.1093/mnras/stx2780](https://doi.org/10.1093/mnras/stx2780)

One Percent Determination of the Primordial Deuterium Abundance

R. J. Cooke, M. Pettini, and C. C. Steidel
2018, ApJ, [10.3847/1538-4357/aaab53](https://doi.org/10.3847/1538-4357/aaab53)

Predictions for deep galaxy surveys with JWST from Λ CDM

W. I. Cowley, C. M. Baugh, S. Cole, et al.
2018, MNRAS, [10.1093/mnras/stx2897](https://doi.org/10.1093/mnras/stx2897)

The core-cusp problem: a matter of perspective

A. Genina, A. Benítez-Llambay, C. S. Frenk, et al.
2018, MNRAS, [10.1093/mnras/stx2855](https://doi.org/10.1093/mnras/stx2855)

HBT+: an improved code for finding subhaloes and building merger trees in cosmological simulations

J. Han, S. Cole, C. S. Frenk, et al.
2018, MNRAS, [10.1093/mnras/stx2792](https://doi.org/10.1093/mnras/stx2792)

Tidal dwarf galaxies in cosmological simulations

S. Ploekinger, K. Sharma, J. Schaye, et al.
2018, MNRAS, [10.1093/mnras/stx2787](https://doi.org/10.1093/mnras/stx2787)

Comparing galaxy formation in semi-analytic models and hydrodynamical simulations

P. D. Mitchell, C. G. Lacey, C. D. P. Lagos, et al.
2018, MNRAS, [10.1093/mnras/stx2770](https://doi.org/10.1093/mnras/stx2770)

Quantifying the impact of mergers on the angular momentum of simulated galaxies

C. d. P. Lagos, A. R. H. Stevens, R. G. Bower, et al.

2018, MNRAS, [10.1093/mnras/stx2667](https://doi.org/10.1093/mnras/stx2667)

Data Release of UV to Submillimeter Broadband Fluxes for Simulated Galaxies from the EAGLE Project

P. Camps, A. Trčka, J. Trayford, et al.

2018, ApJS, [10.3847/1538-4365/aaa24c](https://doi.org/10.3847/1538-4365/aaa24c)

New method for initial density reconstruction

Y. Shi, M. Cautun, and B. Li

2018, PhRvD, [10.1103/PhysRevD.97.023505](https://doi.org/10.1103/PhysRevD.97.023505)

The vertical structure of gaseous galaxy discs in cold dark matter haloes

A. Benítez-Llambay, J. F. Navarro, C. S. Frenk, et al.

2018, MNRAS, [10.1093/mnras/stx2420](https://doi.org/10.1093/mnras/stx2420)

Origins of carbon-enhanced metal-poor stars

M. Sharma, T. Theuns, C. S. Frenk, et al.

2018, MNRAS, [10.1093/mnras/stx2392](https://doi.org/10.1093/mnras/stx2392)

The formation of hot gaseous haloes around galaxies

C. A. Correa, J. Schaye, J. S. B. Wyithe, et al.

2018, MNRAS, [10.1093/mnras/stx2332](https://doi.org/10.1093/mnras/stx2332)

The SAMI Galaxy Survey: understanding observations of large-scale outflows at low redshift with EAGLE simulations

E. Tescari, L. Cortese, C. Power, et al.

2018, MNRAS, [10.1093/mnras/stx2315](https://doi.org/10.1093/mnras/stx2315)

Using artificial neural networks to constrain the halo baryon fraction during reionization

D. Sullivan, I. T. Iliev, and K. L. Dixon

2018, MNRAS, [10.1093/mnras/stx2324](https://doi.org/10.1093/mnras/stx2324)

Equatorial locations of water on Mars: Improved resolution maps based on Mars Odyssey Neutron Spectrometer data

J. T. Wilson, V. R. Eke, R. J. Massey, et al.

2018, Icar, [10.1016/j.icarus.2017.07.028](https://doi.org/10.1016/j.icarus.2017.07.028)

dp005: Theoretical Astrophysics at Leicester

PI: Prof. Richard Alexander

Science Area: Astronomy & Astrophysics

Institute: University of Leicester

The origin of the structure of large-scale magnetic fields in disc galaxies

C. J. Nixon, T. O. Hands, A. R. King, et al.
2018, MNRAS, [10.1093/mnras/sty604](https://doi.org/10.1093/mnras/sty604)

Does slow and steady win the race? Investigating feedback processes in giant molecular clouds

L. Garratt-Smithson, G. A. Wynn, C. Power, et al.
2018, MNRAS, [10.1093/mnras/sty1998](https://doi.org/10.1093/mnras/sty1998)

Warping a protoplanetary disc with a planet on an inclined orbit

R. Nealon, G. Dipierro, R. Alexander, et al.
2018, MNRAS, [10.1093/mnras/sty2267](https://doi.org/10.1093/mnras/sty2267)

Feeding supermassive black holes by collisional cascades

C. Faber and W. Dehnen
2018, MNRAS, [10.1093/mnras/sty1076](https://doi.org/10.1093/mnras/sty1076)

Warp, waves, and wrinkles in the Milky Way

R. Schönrich and W. Dehnen
2018, MNRAS, [10.1093/mnras/sty1256](https://doi.org/10.1093/mnras/sty1256)

Enforcing dust mass conservation in 3D simulations of tightly coupled grains with the PHANTOM SPH code

G. Ballabio, G. Dipierro, B. Veronesi, et al.
2018, MNRAS, [10.1093/mnras/sty642](https://doi.org/10.1093/mnras/sty642)

Gas and multispecies dust dynamics in viscous protoplanetary discs: the importance of the dust back-reaction

G. Dipierro, G. Laibe, R. Alexander, et al.
2018, MNRAS, [10.1093/mnras/sty1701](https://doi.org/10.1093/mnras/sty1701)

Rings and gaps in the disc around Elias 24 revealed by ALMA

G. Dipierro, L. Ricci, L. Pérez, et al.
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On fragmentation of turbulent self-gravitating discs in the long cooling time regime

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dp006: Extreme QCD
PI: Prof. Chris Allton
Science Area: Particle Physics
Institute: Swansea University

Hadronic spectrum calculations in the quark-gluon plasma
Gert Aarts, Chris Allton, Jonas Glesaaen, et al.
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dp008: UKQCD DWF: physics with dynamical chiral quarks
PI: Dr Andreas Juettner
Science Area: Particle Physics
Institute: University of Southampton

Beyond the Standard Model Kaon Mixing with Physical Masses
Peter Boyle, Nicolas Garron, Renwick James Hudspith, et al.
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Novel $|V_{us}|$ Determination Using Inclusive Strange τ Decay and Lattice Hadronic Vacuum Polarization Functions
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dp010: UKMHD Consortium: 2) Solar Atmosphere
PI: Prof. Alan Hood
Science Area: Astronomy & Astrophysics
Institute: University of St Andrews

Comparison of methods for modelling coronal magnetic fields
E. E. Goldstraw, A. W. Hood, P. K. Browning, et al.
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Measuring the electron temperatures of coronal mass ejections with future space-based multi-channel coronagraphs: a numerical test

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J. Threlfall, A. W. Hood, and E. R. Priest
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dp012: Hydrodynamical simulations of cosmic structure formation at KICC: from first light to fully grown

PI: Dr Debora Sijacki

Science Area: Astronomy & Astrophysics

Institute: University of Cambridge

Lyman- α emitters gone missing: the different evolution of the bright and faint populations

L. H. Weinberger, G. Kulkarni, M. G. Haehnelt, et al.
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New constraints on Lyman- α opacity with a sample of 62 quasars at $z > 5.7$

S. E. I. Bosman, X. Fan, L. Jiang, et al.
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H. Katz, T. Kimm, M. Haehnelt, et al.
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A new measurement of the intergalactic temperature at $z \sim 2.55-2.95$

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dp015: High Performance Computing Support for Exeter Astrophysics

PI: Prof. Matthew Bate

Science Area: Astronomy & Astrophysics

Institute: University of Exeter

What can the SEDs of first hydrostatic core candidates reveal about their nature?

A. K. Young, M. R. Bate, C. F. Mowat, et al.

2018, MNRAS, [10.1093/mnras/stx2669](https://doi.org/10.1093/mnras/stx2669)

The collapse of a molecular cloud core to stellar densities using radiation non-ideal magnetohydrodynamics

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On the diversity and statistical properties of protostellar discs

M. R. Bate

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The dependence of stellar properties on initial cloud density

M. O. Jones and M. R. Bate

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Shaken and stirred: the effects of turbulence and rotation on disc and outflow formation during the collapse of magnetized molecular cloud cores

B. T. Lewis and M. R. Bate

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Modelling massive star feedback with Monte Carlo radiation hydrodynamics: photoionization and radiation pressure in a turbulent cloud

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The effect of metallicity on the atmospheres of exoplanets with fully coupled 3D hydrodynamics, equilibrium chemistry, and radiative transfer

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S. Lines, N. J. Mayne, I. A. Boutle, et al.

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The Radius and Entropy of a Magnetized, Rotating, Fully Convective Star: Analysis with Depth-dependent Mixing Length Theories

L. G. Ireland and M. K. Browning

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Hall effect-driven formation of gravitationally unstable discs in magnetized molecular cloud cores

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The 3D Thermal, Dynamical, and Chemical Structure of the Atmosphere of HD 189733b: Implications of Wind-driven Chemistry for the Emission Phase Curve
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dp016: Modelling galaxy baryon physics: from cosmological to sub-galactic scales

PI: Dr Adrienne Slyz

Science Area: Astronomy & Astrophysics

Institute: University of Oxford

Identifying the progenitors of present-day early-type galaxies in observational surveys: correcting ‘progenitor bias’ using the Horizon-AGN simulation
G. Martin, S. Kaviraj, J. E. G. Devriendt, et al.
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Caught in the rhythm. I. How satellites settle into a plane around their central galaxy
C. Welker, Y. Dubois, C. Pichon, et al.
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Normal black holes in bulge-less galaxies: the largely quiescent, merger-free growth of black holes over cosmic time
G. Martin, S. Kaviraj, M. Volonteri, et al.
2018, MNRAS, [10.1093/mnras/sty324](https://doi.org/10.1093/mnras/sty324)

Bondi or not Bondi: the impact of resolution on accretion and drag force modelling for supermassive black holes

R. S. Beckmann, A. Slyz, and J. Devriendt
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A three-phase amplification of the cosmic magnetic field in galaxies

S. Martin-Alvarez, J. Devriendt, A. Slyz, et al.
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The role of mergers in driving morphological transformation over cosmic time

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The impact of baryons on the matter power spectrum from the Horizon-AGN cosmological hydrodynamical simulation

N. E. Chisari, M. L. A. Richardson, J. Devriendt, et al.
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Impact of Lyman alpha pressure on metal-poor dwarf galaxies

T. Kimm, M. Haehnelt, J. Blaizot, et al.
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TANGOS: The Agile Numerical Galaxy Organization System

A. Pontzen and M. Tremmel
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dp019: HPQCD High Precision QCD Collaboration

PI: Prof. Christine Davies

Science Area: Particle Physics

Institute: University of Glasgow

Higher-Order Hadronic-Vacuum-Polarization Contribution to the Muon G-2 from Lattice QCD

Bipasha Chakraborty, Christine T. H. Davies, Jonna Koponen, et al.
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Determination of quark masses from $\mathbf{n}_f = 4$ lattice QCD and the RI-SMOM intermediate scheme

A. T. Lytle, C. T. H. Davies, D. Hatton, et al.
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Judd Harrison, Christine Davies, and Matthew Wingate
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B. Chakraborty et al.

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New methods for B meson decay constants and form factors from lattice NRQCD

C. Hughes, C. T. H. Davies, and C. J. Monahan

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Searching for beauty-fully bound tetraquarks using lattice nonrelativistic QCD

Ciaran Hughes, Estia Eichten, and Christine T. H. Davies

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dp034: Numerical simulations of black hole binaries

PI: Dr Mark Hannam

Science Area: Astronomy & Astrophysics

Institute: University of Cardiff

First Higher-Multipole Model of Gravitational Waves from Spinning and Coalescing Black-Hole Binaries

L. London, S. Khan, E. Fauchon-Jones, et al.

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Inferring black-hole orbital dynamics from numerical-relativity gravitational waveforms

E. Hamilton and M. Hannam

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Relevance of tidal effects and post-merger dynamics for binary neutron star parameter estimation

R. Dudi, F. Pannarale, T. Dietrich, et al.

2018, PhRvD, [10.1103/PhysRevD.98.084061](https://doi.org/10.1103/PhysRevD.98.084061)

dp040: Stellar Structure and Nucleosynthesis

PI: Dr Raphael Hirschi

Science Area: Astronomy & Astrophysics

Institute: Keele University

Uncertainties in the production of p nuclides in thermonuclear supernovae determined by Monte Carlo variations

N. Nishimura, T. Rauscher, R. Hirschi, et al.

2018, MNRAS, [10.1093/mnras/stx3033](https://doi.org/10.1093/mnras/stx3033)

Uncertainties in s-process nucleosynthesis in low-mass stars determined from Monte Carlo variations

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OGLE14-073 - a promising pair-instability supernova candidate

A. Kozyreva, M. Kromer, U. M. Noebauer, et al.
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dp047: The Simulation of Protoplanetary Discs: DISCSIM

PI: Prof. Cathy Clarke

Science Area: Astronomy & Astrophysics

Institute: University of Southampton

Evidence of a past disc-disc encounter: HV and DO Tau

A. J. Winter, R. A. Booth, and C. J. Clarke
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Breakthrough revisited: investigating the requirements for growth of dust beyond the bouncing barrier

R. A. Booth, F. Meru, M. H. Lee, et al.
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E. Ragusa, G. Rosotti, J. Teyssandier, et al.
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GANDALF - Graphical Astrophysics code for N-body Dynamics And Lagrangian Fluids

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dp060: Temperature dependent cross-sections for large hydrocarbons

PI: Dr Sergey Yurchenko

Science Area: Astronomy & Astrophysics

Institute: University College London

ExoMol line lists XXXI: spectroscopy of lowest eight electronic states of C₂

S. N. Yurchenko, I. Szabó, E. Pyatenko, et al.

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Improved potential energy surface and spectral assignments for ammonia in the near-infrared region

P. A. Coles, R. I. Ovsyannikov, O. L. Polyansky, et al.

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S. N. Yurchenko, H. Williams, P. C. Leyland, et al.

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A. Owens, A. Yachmenev, W. Thiel, et al.

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EXOCROSS: a general program for generating spectra from molecular line lists

S. N. Yurchenko, A. F. Al-Refaie, and J. Tennyson

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dp063: Galactic Archaeology in the Gaia era

PI: Dr Daisuke Kawata

Science Area: Astronomy & Astrophysics

Institute: University College London

Radial distribution of stellar motions in Gaia DR2

D. Kawata, J. Baba, I. Ciucă, et al.

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SPMHD simulations of structure formation

D. J. Barnes, A. Y. L. On, K. Wu, et al.

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D. Kawata, C. Allende Prieto, C. B. Brook, et al.

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dp065: UKMHD Consortium: 1) Solar and Planetary Interiors
PI: Prof. David Hughes
Science Area: Astronomy & Astrophysics
Institute: University of Sheffield

Anelastic spherical dynamos with radially variable electrical conductivity
W. Dietrich and C. A. Jones
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dp066: UKMHD Consortium: 3) Astrophysical MHD and Kinetic Simulations.
PI: Prof. Sam Falle
Science Area: Astronomy & Astrophysics
Institute: University of Leeds

A new mechanical stellar wind feedback model for the Rosette Nebula
C. J. Wareing, J. M. Pittard, N. J. Wright, et al.
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K. J. A. Goldsmith and J. M. Pittard
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K. N. Gourgouliatos and R. Hollerbach
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Q. Xia and V. Zharkova
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