

# Michael J. Wilson

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## Education and research experience

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- Aug. 2017 – present     **Cosmology Postdoctoral Fellow, Lawrence Berkeley Lab.**  
Collaborators: Prof. M. White, Prof. D. Schlegel, Prof. S. Ho
- Sep. 2016 – Aug. 2017     **Postdoctoral Research Associate, University of Edinburgh**  
Collaborators: Prof. J. Peacock
- Sep. 2012 – Sep. 2016     **Doctor of Philosophy, University of Edinburgh**  
*“Geometric and growth rate tests of gravity with recovered linear cosmological perturbations”*  
Supervisors: Prof. J. Peacock, Prof. A. Taylor, Dr S. de la Torre
- Jun. 2011 – Aug. 2011     **Summer research placement, Princeton University**  
Supervisors: Prof. D. Spergel, Dr B. Sherwin
- Sep. 2008 – Jun. 2012     **Master of Physics – First Class, University of Oxford**  
*“A measurement of the Sunyaev-Zel’dovich effect using the three-point correlation function”*  
Supervisors: Prof. J. Dunkley, Dr G. Addison  
Prize(s): Exhibitioner
- Sep. 2001 – Jun. 2008     **Belfast Royal Academy**  
Prize(s): Physics, Chemistry, Science, Scholarship

## Research interests

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Large-scale structure: spectroscopic galaxy surveys;  
Cosmological tests of General Relativity  
Cosmic Microwave Background and gravitational lensing  
High-redshift galaxy formation

## Publications

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- [1] M. J. Wilson et al. (2012), Physical Review D, 86, 122005,  
“Atacama Cosmology Telescope: A measurement of the Sunyaev-Zel’dovich effect using the skewness of the CMB temperature distribution”,  
<http://journals.aps.org/prd/abstract/10.1103/PhysRevD.86.122005>
- [2] M. J. Wilson, J. Peacock, A. Taylor, S. de la Torre (2016), MNRAS (accepted),  
“Rapid modelling of the redshift-space power spectrum multipoles for a masked density field”,  
<http://mnras.oxfordjournals.org/content/early/2016/10/08/mnras.stw2576.abstract>
- [3] M. J. Wilson (2016), Thesis, arXiv.org,  
“Geometric and growth rate tests of General Relativity with recovered linear cosmological perturbations”,  
<http://arxiv.org/abs/1610.08362>
- [4] M. J. Wilson and the VIPERS collaboration, Astronomy & Astrophysics (in prep., 2018),  
“VIPERS: Geometric and growth rate tests of gravity with recovered linear cosmological perturbations”,  
[http://www.roe.ac.uk/~mjw/GR\\_tests.pdf](http://www.roe.ac.uk/~mjw/GR_tests.pdf)
- [5] S. Rota, B. R. Granett, J. Bel, L. Guzzo, J. A. Peacock, M. J. Wilson and the VIPERS collaboration, Astronomy & Astrophysics (2016),  
“The matter density and baryon fraction from the galaxy power spectrum at  $0.6 < z < 1.1$ ”,  
<http://arxiv.org/abs/1611.07044>
- [6] A. Smith, J. He, S. Cole, L. Stothert, P. Norberg, C. Baugh, D. Bianchi, M. J. Wilson and the DESI BGS collaboration (2018), MNRAS (submitted)  
“Correcting for fibre assignment incompleteness in the DESI bright galaxy survey”,  
<http://arxiv.org/abs/>

## Supervisory experience

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- May 2017 – Jul. 2017 Agne Semenaite, Summer research project  
“Cosmology with the kinetic Sunyaev Zeldovich effect and the Dark Energy Spectroscopic Instrument”
- Sep. 2016 – Dec. 2016 Jonas Paulavičius, Bachelor’s degree project  
“Rescaling cosmological  $N$ -body simulations for modelling marked clustering statistics”
- Jul. 2016 – Sep. 2016 Jonas Paulavičius, Summer research project  
“Rescaling cosmological  $N$ -body simulations for accurate error estimation in redshift-space distortions analyses”

## Grants

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Balzan visiting Fellow at New College, Oxford, Oct. – Nov. (2018)

## Presentations

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### Talks

VIMOS Public Extragalactic Redshift Survey conference, Krakow (Oct. 2014)  
Institute for Astronomy seminar, Edinburgh (Jul. 2015)  
VIMOS Public Extragalactic Redshift Survey conference, Marseille (Aug. 2015)  
DEX XII conference, Durham (Jan. 2016)  
Astronomy seminar, Durham (Oct. 2016)  
Institut d'Estudis Espacials de Catalunya, Barcelona (Oct. 2016)  
N. Padmanabhan research group, Yale (Nov. 2016)  
Cosmology seminar, UC Berkeley (Nov. 2016)  
Centre for Cosmology and AstroParticle Physics seminar, Ohio (Nov. 2016)  
Hyper Suprime-Cam research group, Princeton (Nov. 2016)  
Bahcall lunch, Institute for Advanced Study, Princeton (Nov. 2016)  
Chamberlain Fellowship Seminar, Lawrence Berkeley National Laboratory (Jan. 2017)  
B-modes from Space, University of California, Berkeley (Dec. 2017)  
Multiplexed Fiber Spectroscopy with Keck & the TMT, LBNL, Berkeley (Jan. 2018)  
New results and new methods in galaxy clustering, Sesto, Italy (July 2018)  
The non-linear Universe, Smartno, Slovenia, (July 2018)

### Posters

Theoretical and observational progress on large-scale structure, Munich (Jul. 2015)  
B-modes from Space, University of California Berkeley (Dec. 2017)

## Pastoral

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Astronomy postdoctoral representative, UC Berkeley

## Outreach

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LBNL Twitter account author, <https://twitter.com/LBNLphysics>  
Winter series seminar, Edinburgh

## Conferences and schools

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VIMOS Public Extragalactic Redshift Survey conference, Edinburgh (Sep. 2012)  
TRR33 school: Cosmology – theory for observers, observations for theorists, Tonale (Dec. 2012)  
New horizons for observational cosmology, Lake Como (Jul. 2013)  
New directions in theoretical physics, Edinburgh (Jan. 2016)  
Cosmology with neutral Hydrogen, Berkeley Center for Cosmological Physics (Jan. 2017)  
KIPAC Cosmic Microwave Background lensing workshop, Stanford (Sep. 2017)  
Cosmic Visions Dark Energy, Lawrence Berkeley National Lab. (Nov. 2017)  
Modelling the Extragalactic Sky, Berkeley Centre for Cosmological Physics (Jan. 2018)  
Astronomy and Cosmology in the 2020s, SnowPAC, Utah (March 2018)  
Statistical challenges for large-scale structure in the era of LSST, Oxford University (Apr. 2018)  
2018 ImageXD Workshop, Berkeley Institute for Data Science (May 2018)  
DECam Community Science Workshop 2018, Tucson (May 2018)  
DESI Collaboration Meeting, Tucson (May 2018).

## Teaching assistant experience

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Algebra and calculus	Numerical recipes
Mathematics for physics	General Relativity
Fourier analysis and statistics	Cosmology

## Practical skills

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Organiser of the LBNL Cosmology weekly meeting  
C and Python programming  
Referee for the Monthly Notices of the Royal Astronomical Society

## References

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**Prof. M. White**, [mjwhite@lbl.gov](mailto:mjwhite@lbl.gov)

Department of Physics, University of California Berkeley

**Prof. J. Peacock**, [jap@roe.ac.uk](mailto:jap@roe.ac.uk)

Institute for Astronomy, University of Edinburgh

**Prof. D. Schlegel**, [djschlegel@lbl.gov](mailto:djschlegel@lbl.gov)

Lawrence Berkeley National Laboratory, Berkeley

**Prof. A. Taylor**, [ant@roe.ac.uk](mailto:ant@roe.ac.uk)

Institute for Astronomy, University of Edinburgh

**Prof. L. Guzzo**, [luigi.guzzo@brera.inaf.it](mailto:luigi.guzzo@brera.inaf.it)

INAF - Osservatorio, Astronomico di Brera

Institute for Astronomy, University of Edinburgh