

Large scale structure and dark energy

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Bibliography

- ACQUAVIVA, V., HAJIAN, A., SPERGEL, D. N. & DAS, S., 2008. Next Generation Redshift Surveys and the Origin of Cosmic Acceleration. *ArXiv e-prints*, **803**.
- ADELMAN-MCCARTHY, J. K., AGÜEROS, M. A., ALLAM, S. S., ALLENDE PRIETO, C., ANDERSON, K. S. J. ET AL., 2008. The Sixth Data Release of the Sloan Digital Sky Survey. *ApJS*, **175**, 297–313.
- ADELMAN-MCCARTHY, J. K., AGÜEROS, M. A., ALLAM, S. S., ANDERSON, K. S. J., ANDERSON, S. F. ET AL., 2006. The Fourth Data Release of the Sloan Digital Sky Survey. *ApJS*, **162**, 38–48.
- AFSHORDI, N., 2004. Integrated Sachs-Wolfe effect in cross-correlation: The observer's manual. *PRD*, **70**(8), 083536.
- AFSHORDI, N., LOH, Y.-S. & STRAUSS, M. A., 2004. Cross-correlation of the cosmic microwave background with the 2MASS galaxy survey: Signatures of dark energy, hot gas, and point sources. *PRD*, **69**(8).
- ALMEIDA, C., BAUGH, C. M., WAKE, D. A., LACEY, C. G., BENSON, A. J., BOWER, R. G. & PIMBLETT, K., 2008. Luminous red galaxies in hierarchical cosmologies. *MNRAS*, **466**.
- ANGULO, R. E., BAUGH, C. M., FRENK, C. S. & LACEY, C. G., 2008. The detectability of baryonic acoustic oscillations in future galaxy surveys. *MNRAS*, **383**, 755–776.
- BAUGH, C. M., CROTON, D. J., GAZTAÑAGA, E., NORBERG, P., COLLESS, M. ET AL., 2004. The 2dF Galaxy Redshift Survey: hierarchical galaxy clustering. *MNRAS*, **351**, L44–L48.
- BENNETT, C. L., HILL, R. S., HINSHAW, G., NOLTA, M. R., ODEGARD, N., PAGE, L., SPERGEL, D. N., WEILAND, J. L., WRIGHT, E. L., HALPERN, M., JAROSIK, N., KOGUT, A., LIMON, M., MEYER, S. S., TUCKER, G. S. & WOLLACK, E., 2003. First-Year Wilkinson Microwave Anisotropy Probe (WMAP) Observations: Foreground Emission. *ApJS*, **148**, 97–117.
- BENSON, A. J., BAUGH, C. M., COLE, S., FRENK, C. S. & LACEY, C. G., 2000. The dependence of velocity and clustering statistics on galaxy properties. *MNRAS*, **316**, 107–119.
- BERNARDEAU, F., COLOMBI, S., GAZTAÑAGA, E. & SCOCCHIMARRO, R., 2002. Large-scale structure of the Universe and cosmological perturbation theory. *PhysRev*, **367**, 1–3.
- BERTSCHINGER, E. & ZUKIN, P., 2008. Distinguishing Modified Gravity from Dark Energy. *ArXiv e-prints*, **801**.

- BLAKE, C., COLLISTER, A., BRIDLE, S. & LAHAV, O., 2007. Cosmological baryonic and matter densities from 600000 SDSS luminous red galaxies with photometric redshifts. *MNRAS*, **374**, 1527–1548.
- BLAKE, C. & GLAZEBROOK, K., 2003. Probing Dark Energy Using Baryonic Oscillations in the Galaxy Power Spectrum as a Cosmological Ruler. *ApJ*, **594**, 665–673.
- BOUGHN, S. & CRITTENDEN, R., 2004a. A correlation between the cosmic microwave background and large-scale structure in the Universe. *Nature*, **427**, 45–47.
- BOUGHN, S. P. & CRITTENDEN, R. G., 2004b. The Large-Scale Bias of the Hard X-Ray Background. *ApJ*, **612**, 647–651.
- BOUGHN, S. P., CRITTENDEN, R. G. & TUROK, N. G., 1998. Correlations between the cosmic X-ray and microwave backgrounds: constraints on a cosmological constant. *New Astronomy*, **3**, 275–291.
- CABRÉ, A., FOSALBA, P., GAZTAÑAGA, E. & MANERA, M., 2007. Error analysis in cross-correlation of sky maps: application to the Integrated Sachs-Wolfe detection. *MNRAS*, **381**, 1347–1368.
- CABRÉ, A., GAZTAÑAGA, E., MANERA, M., FOSALBA, P. & CASTANDER, F., 2006. Cross-correlation of Wilkinson Microwave Anisotropy Probe third-year data and the Sloan Digital Sky Survey DR4 galaxy survey: new evidence for dark energy. *MNRAS*, **372**, L23–L27.
- CANNON, R., DRINKWATER, M., EDGE, A., EISENSTEIN, D., NICHOL, R. ET AL., 2007. 2dF-SDSS Luminous Red Galaxy Survey, 2SLAQ (Cannon+, 2006). *VizieR Online Data Catalog*, **837**, 20425.
- CORASANITI, P.-S., GIANNANTONIO, T. & MELCHIORRI, A., 2005. Constraining dark energy with cross-correlated CMB and large scale structure data. *PRD*, **71**(12), 123521.
- CRITTENDEN, R. G. & TUROK, N., 1996. Looking for a Cosmological Constant with the Rees-Sciama Effect. *Physical Review Letters*, **76**, 575–578.
- CROCCE, M. & SCOCCHIMARRO, R., 2008. Nonlinear evolution of baryon acoustic oscillations. *PRD*, **77**(2), 023533.
- DA ÂNGELA, J., SHANKS, T., CROOM, S. M., WEILBACHER, P., BRUNNER, R. J., COUCH, W. J., MILLER, L., MYERS, A. D., NICHOL, R. C., PIMBLETT, K. A., DE PROPRIIS, R., RICHARDS, G. T., ROSS, N. P., SCHNEIDER, D. P. & WAKE, D., 2008. The 2dF-SDSS LRG and QSO survey: QSO clustering and the L-z degeneracy. *MNRAS*, **383**, 565–580.
- DAVIS, M. & PEEBLES, P. J. E., 1983. A survey of galaxy redshifts. V - The two-point position and velocity correlations. *ApJ*, **267**, 465–482.
- DE OLIVEIRA-COSTA, A., TEGMARK, M., ZALDARRIAGA, M. & HAMILTON, A., 2004. Significance of the largest scale CMB fluctuations in WMAP. *PRD*, **69**(6), 063516.
- DORÉ, O., HOLDER, G. P. & LOEB, A., 2004. The Cosmic Microwave Background Quadrupole in a Polarized Light. *ApJ*, **612**, 81–85.
- EFSTATHIOU, G., 2003. The statistical significance of the low cosmic microwave background multipoles. *MNRAS*, **346**, L26–L30.

- EISENSTEIN, D. J., ANNIS, J., GUNN, J. E., SZALAY, A. S., CONNOLLY, A. J. ET AL., 2001. Spectroscopic Target Selection for the Sloan Digital Sky Survey: The Luminous Red Galaxy Sample. *AJ*, **122**, 2267–2280.
- EISENSTEIN, D. J., BLANTON, M., ZEHAVI, I., BAHCALL, N., BRINKMANN, J., LOVEDAY, J., MEIKSIN, A. & SCHNEIDER, D., 2005a. The Small-Scale Clustering of Luminous Red Galaxies via Cross-Correlation Techniques. *ApJ*, **619**, 178–192.
- EISENSTEIN, D. J. & HU, W., 1998. Baryonic Features in the Matter Transfer Function. *ApJ*, **496**, 605.
- EISENSTEIN, D. J., SEO, H.-J., SIRKO, E. & SPERGEL, D. N., 2007a. Improving Cosmological Distance Measurements by Reconstruction of the Baryon Acoustic Peak. *ApJ*, **664**, 675–679.
- EISENSTEIN, D. J., SEO, H.-J. & WHITE, M., 2007b. On the Robustness of the Acoustic Scale in the Low-Redshift Clustering of Matter. *ApJ*, **664**, 660–674.
- EISENSTEIN, D. J., ZEHAVI, I., HOGG, D. W., SCOCCHIMARRO, R., BLANTON, M. R. ET AL., 2005b. Detection of the Baryon Acoustic Peak in the Large-Scale Correlation Function of SDSS Luminous Red Galaxies. *ApJ*, **633**, 560–574.
- FELDMAN, H. A., KAISER, N. & PEACOCK, J. A., 1994. Power-spectrum analysis of three-dimensional redshift surveys. *ApJ*, **426**, 23–37.
- FOSALBA, P. & GAZTAÑAGA, E., 2004. Measurement of the gravitational potential evolution from the cross-correlation between WMAP and the APM Galaxy Survey. *MNRAS*, **350**, L37–L41.
- FOSALBA, P., GAZTAÑAGA, E. & CASTANDER, F. J., 2003. Detection of the Integrated Sachs-Wolfe and Sunyaev-Zeldovich Effects from the Cosmic Microwave Background-Galaxy Correlation. *ApJ*, **597**, L89–L92.
- FOSALBA, P. & SZAPUDI, I., 2004. The Angular Power Spectrum of the First-Year Wilkinson Microwave Anisotropy Probe Data Reanalyzed. *ApJ*, **617**, L95–L98.
- FRY, J. N. & GAZTAÑAGA, E., 1994. Redshift distortions of galaxy correlation functions. *ApJ*, **425**, 1–13.
- GAZTAÑAGA, E. & JUSZKIEWICZ, R., 2001. Gravity's Smoking Gun? *ApJ*, **558**, L1–L4.
- GAZTAÑAGA, E., MANERA, M. & MULTAMÄKI, T., 2006. New light on dark cosmos. *MNRAS*, **365**, 171–177.
- GAZTAÑAGA, E., WAGG, J., MULTAMÄKI, T., MONTAÑA, A. & HUGHES, D. H., 2003. Two-point anisotropies in WMAP and the cosmic quadrupole. *MNRAS*, **346**, 47–57.
- GIANNANTONIO, T., CRITTENDEN, R. G., NICHOL, R. C., SCRANTON, R., RICHARDS, G. T., MYERS, A. D., BRUNNER, R. J., GRAY, A. G., CONNOLLY, A. J. & SCHNEIDER, D. P., 2006. High redshift detection of the integrated Sachs-Wolfe effect. *PRD*, **74**(6), 063520.
- GIANNANTONIO, T., SCRANTON, R., CRITTENDEN, R. G., NICHOL, R. C., BOUGHN, S. P., MYERS, A. D. & RICHARDS, G. T., 2008. Combined analysis of the integrated Sachs-Wolfe effect and cosmological implications. *ArXiv e-prints*, **801**.

- GÓRSKI, K. M. & ET AL., 1999. Analysis issues for large CMB data sets. In A. J. Banday, R. K. Sheth & L. N. da Costa, eds., *Evolution of Large Scale Structure : From Recombination to Garching*, 37.
- GUZZO, L., PIERLEONI, M., MENEUX, B., BRANCHINI, E., LE FÈVRE, O. ET AL., 2008. A test of the nature of cosmic acceleration using galaxy redshift distortions. *Nature*, **451**, 541–544.
- HAMILTON, A. J. S., 1992. Measuring Omega and the real correlation function from the redshift correlation function. *ApJ*, **385**, L5–L8.
- HAWKINS, E., MADDOX, S., COLE, S., LAHAV, O., MADGWICK, D. S. ET AL., 2003. The 2dF Galaxy Redshift Survey: correlation functions, peculiar velocities and the matter density of the Universe. *MNRAS*, **346**, 78–96.
- HINSHAW, G., BARNES, C., BENNETT, C. L., GREASON, M. R., HALPERN, M., HILL, R. S., JAROSIK, N., KOGUT, A., LIMON, M., MEYER, S. S., ODEGARD, N., PAGE, L., SPERGEL, D. N., TUCKER, G. S., WEILAND, J. L., WOLLACK, E. & WRIGHT, E. L., 2003. First-Year Wilkinson Microwave Anisotropy Probe (WMAP) Observations: Data Processing Methods and Systematic Error Limits. *ApJS*, **148**, 63–95.
- HINSHAW, G., NOLTA, M. R., BENNETT, C. L., BEAN, R., DORÉ, O. ET AL., 2007. Three-Year Wilkinson Microwave Anisotropy Probe (WMAP) Observations: Temperature Analysis. *ApJS*, **170**, 288–334.
- HUI, L., GAZTAÑAGA, E. & LOVERDE, M., 2007. Anisotropic magnification distortion of the 3D galaxy correlation. I. Real space. *PRD*, **76**(10), 103502.
- HUI, L., GAZTAÑAGA, E. & LOVERDE, M., 2008. Anisotropic magnification distortion of the 3D galaxy correlation. II. Fourier and redshift space. *PRD*, **77**(6), 063526.
- HÜTSI, G., 2006a. Acoustic oscillations in the SDSS DR4 luminous red galaxy sample power spectrum. *A&A*, **449**, 891–902.
- HÜTSI, G., 2006b. Power spectrum of the SDSS luminous red galaxies: constraints on cosmological parameters. *A&A*, **459**, 375–389.
- JEONG, D. & KOMATSU, E., 2006. Perturbation Theory Reloaded: Analytical Calculation of Nonlinearity in Baryonic Oscillations in the Real-Space Matter Power Spectrum. *ApJ*, **651**, 619–626.
- KAISER, N., 1987. Clustering in real space and in redshift space. *MNRAS*, **227**, 1–21.
- LANDY, S. D., 2002. The Pairwise Velocity Distribution Function of Galaxies in the Las Campanas Redshift Survey, Two-Degree Field Survey, and Sloan Digital Sky Survey. *ApJ*, **567**, L1–L1.
- LANDY, S. D. & SZALAY, A. S., 1993. Bias and variance of angular correlation functions. *ApJ*, **412**, 64–71.
- LI, C., JING, Y. P., KAUFFMANN, G., BÖRNER, G., WHITE, S. D. M. & CHENG, F. Z., 2006. The dependence of the pairwise velocity dispersion on galaxy properties. *MNRAS*, **368**, 37–47.
- LINDER, E. V., 2005. Cosmic growth history and expansion history. *PRD*, **72**(4), 043529.

- LINDER, E. V., 2007. Redshift Distortions as a Probe of Gravity. *ArXiv e-prints*, **709**.
- LOVERDE, M., HUI, L. & GAZTAÑAGA, E., 2007. Magnification-temperature correlation: The dark side of integrated Sachs-Wolfe measurements. *PRD*, **75**(4), 043519.
- MANDELBAUM, R., SELJAK, U., COOL, R. J., BLANTON, M., HIRATA, C. M. & BRINKMANN, J., 2006. Density profiles of galaxy groups and clusters from SDSS galaxy-galaxy weak lensing. *MNRAS*, **372**, 758–776.
- MASJEDI, M., HOGG, D. W. & BLANTON, M. R., 2007. The growth of luminous red galaxies by merging. *ArXiv e-prints*, **708**.
- MASJEDI, M., HOGG, D. W., COOL, R. J., EISENSTEIN, D. J., BLANTON, M. R., ZEHAVI, I., BERLIND, A. A., BELL, E. F., SCHNEIDER, D. P., WARREN, M. S. & BRINKMANN, J., 2006. Very Small Scale Clustering and Merger Rate of Luminous Red Galaxies. *ApJ*, **644**, 54–60.
- MATSUBARA, T., 2000a. The Correlation Function in Redshift Space: General Formula with Wide-Angle Effects and Cosmological Distortions. *ApJ*, **535**, 1–23.
- MATSUBARA, T., 2000b. The Gravitational Lensing in Redshift-Space Correlation Functions of Galaxies and Quasars. *ApJ*, **537**, L77–L80.
- MATSUBARA, T., 2004. Correlation Function in Deep Redshift Space as a Cosmological Probe. *ApJ*, **615**, 573–585.
- MEIKSIN, A., WHITE, M. & PEACOCK, J. A., 1999. Baryonic signatures in large-scale structure. *MNRAS*, **304**, 851–864.
- NESSERIS, S. & PERIVOLAROPOULOS, L., 2008. Testing Λ CDM with the growth function $\delta(a)$: Current constraints. *PRD*, **77**(2), 023504.
- NOLTA, M. R., WRIGHT, E. L., PAGE, L., BENNETT, C. L., HALPERN, M., HINSHAW, G., JAROSIK, N., KOGUT, A., LIMON, M., MEYER, S. S., SPERGEL, D. N., TUCKER, G. S. & WOLLACK, E., 2004. First Year Wilkinson Microwave Anisotropy Probe Observations: Dark Energy Induced Correlation with Radio Sources. *ApJ*, **608**, 10–15.
- OKUMURA, T., MATSUBARA, T., EISENSTEIN, D. J., KAYO, I., HIKAGE, C., SZALAY, A. S. & SCHNEIDER, D. P., 2008. Large-Scale Anisotropic Correlation Function of SDSS Luminous Red Galaxies. *ApJ*, **676**, 889–898.
- PADMANABHAN, N., HIRATA, C. M., SELJAK, U., SCHLEGEGL, D. J., BRINKMANN, J. & SCHNEIDER, D. P., 2005. Correlating the CMB with luminous red galaxies: The integrated Sachs-Wolfe effect. *PRD*, **72**(4), 043525.
- PADMANABHAN, N., SCHLEGEGL, D. J., SELJAK, U., MAKAROV, A., BAHCALL, N. A. ET AL., 2007. The clustering of luminous red galaxies in the Sloan Digital Sky Survey imaging data. *MNRAS*, **378**, 852–872.
- PADMANABHAN, N. & WHITE, M., 2008. Constraining Anisotropic Baryon Oscillations. *ArXiv e-prints*, **804**.
- PEEBLES, P. J. E., 1980. *The large-scale structure of the universe*. Research supported by the National Science Foundation. Princeton, N.J., Princeton University Press, 1980. 435 p.

- PEIRIS, H. V. & SPERGEL, D. N., 2000. Cross-Correlating the Sloan Digital Sky Survey with the Microwave Sky. *ApJ*, **540**, 605–613.
- PERCIVAL, W. J., COLE, S., EISENSTEIN, D. J., NICHOL, R. C., PEACOCK, J. A., POPE, A. C. & SZALAY, A. S., 2007a. Measuring the Baryon Acoustic Oscillation scale using the Sloan Digital Sky Survey and 2dF Galaxy Redshift Survey. *MNRAS*, **381**, 1053–1066.
- PERCIVAL, W. J., NICHOL, R. C., EISENSTEIN, D. J., WEINBERG, D. H., FUKUGITA, M., POPE, A. C., SCHNEIDER, D. P., SZALAY, A. S., VOGELEY, M. S., ZEHAVI, I., BAHCALL, N. A., BRINKMANN, J., CONNOLLY, A. J., LOVEDAY, J. & MEIKSIN, A., 2007b. Measuring the Matter Density Using Baryon Oscillations in the SDSS. *ApJ*, **657**, 51–55.
- POGOSIAN, L., CORASANITI, P. S., STEPHAN-OTTO, C., CRITTENDEN, R. & NICHOL, R., 2005. Tracking dark energy with the integrated Sachs-Wolfe effect: Short and long-term predictions. *PRD*, **72**(10), 103519.
- PRESS, W. H., TEUKOLSKY, S. A., VETTERLING, W. T. & FLANNERY, B. P., 1992. *Numerical recipes in FORTRAN. The art of scientific computing*. Cambridge: University Press, —c1992, 2nd ed.
- RASSAT, A., LAND, K., LAHAV, O. & ABDALLA, F. B., 2007. Cross-correlation of 2MASS and WMAP 3: implications for the integrated Sachs-Wolfe effect. *MNRAS*, **377**, 1085–1094.
- RATCLIFFE, A., SHANKS, T., PARKER, Q. A., BROADBENT, A., WATSON, F. G., OATES, A. P., COLLINS, C. A. & FONG, R., 1998. Durham/UKST Galaxy Redshift Survey (Ratcliffe+, 1998). *VizieR Online Data Catalog*, **730**, 417.
- ROSS, N. P., DA ÂNGELA, J., SHANKS, T., WAKE, D. A., CANNON, R. D. ET AL., 2007. The 2dF-SDSS LRG and QSO Survey: the LRG 2-point correlation function and redshift-space distortions. *MNRAS*, **381**, 573–588.
- SACHS, R. K. & WOLFE, A. M., 1967. Perturbations of a Cosmological Model and Angular Variations of the Microwave Background. *ApJ*, **147**, 73.
- SANCHEZ, A. G., BAUGH, C. M. & ANGULO, R., 2008. What is the best way to measure baryonic acoustic oscillations? *ArXiv e-prints*, **804**.
- SÁNCHEZ, A. G. & COLE, S., 2008. The galaxy power spectrum: precision cosmology from large-scale structure? *MNRAS*, **385**, 830–840.
- SAUNDERS, W., ROWAN-ROBINSON, M. & LAWRENCE, A., 1992. The spatial correlation function of IRAS galaxies on small and intermediate scales. *MNRAS*, **258**, 134–146.
- SCHLEGEL, D. J., FINKBEINER, D. P. & DAVIS, M., 1998. Maps of Dust Infrared Emission for Use in Estimation of Reddening and Cosmic Microwave Background Radiation Foregrounds. *ApJ*, **500**, 525.
- SCOCCIMARRO, R., 2004. Redshift-space distortions, pairwise velocities, and nonlinearities. *PRD*, **70**(8), 083007.
- SCRANTON, R., CONNOLLY, A. J., NICHOL, R. C., STEBBINS, A., SZAPUDI, I. ET AL., 2003. Physical Evidence for Dark Energy. *ArXiv Astrophysics e-prints*.

- SEO, H.-J. & EISENSTEIN, D. J., 2005. Baryonic Acoustic Oscillations in Simulated Galaxy Redshift Surveys. *ApJ*, **633**, 575–588.
- SLOSAR, A., SELJAK, U. & TASITSIOMI, A., 2006. Pairwise velocities in the halo model: luminosity and scale dependence. *MNRAS*, **366**, 1455–1464.
- SMITH, R. E., SCOCCHIMARRO, R. & SHETH, R. K., 2008. Motion of the acoustic peak in the correlation function. *PRD*, **77**(4), 043525.
- SPERGEL, D. N., BEAN, R., DORÉ, O., NOLTA, M. R., BENNETT, C. L. ET AL., 2007. Three-Year Wilkinson Microwave Anisotropy Probe (WMAP) Observations: Implications for Cosmology. *ApJS*, **170**, 377–408.
- SZAPUDI, I., 2004. Wide-Angle Redshift Distortions Revisited. *ApJ*, **614**, 51–55.
- SZAPUDI, I., PRUNET, S. & COLOMBI, S., 2001a. Fast Analysis of Inhomogenous Megapixel Cosmic Microwave Background Maps. *ApJ*, **561**, L11–L14.
- SZAPUDI, I., PRUNET, S., POGOSYAN, D., SZALAY, A. S. & BOND, J. R., 2001b. Fast Cosmic Microwave Background Analyses via Correlation Functions. *ApJ*, **548**, L115–L118.
- TEGMARK, M., DE OLIVEIRA-COSTA, A. & HAMILTON, A. J., 2003. High resolution foreground cleaned CMB map from WMAP. *PRD*, **68**(12), 123523.
- TEGMARK, M., EISENSTEIN, D. J., STRAUSS, M. A., WEINBERG, D. H., BLANTON, M. R. ET AL., 2006. Cosmological constraints from the SDSS luminous red galaxies. *PRD*, **74**(12), 123507.
- TINKER, J. L., 2007. Redshift-space distortions with the halo occupation distribution - II. Analytic model. *MNRAS*, **374**, 477–492.
- TINKER, J. L., NORBERG, P., WEINBERG, D. H. & WARREN, M. S., 2007. On the Luminosity Dependence of the Galaxy Pairwise Velocity Dispersion. *ApJ*, **659**, 877–889.
- TINKER, J. L., WEINBERG, D. H. & ZHENG, Z., 2006. Redshift-space distortions with the halo occupation distribution - I. Numerical simulations. *MNRAS*, **368**, 85–108.
- VIELVA, P., MARTÍNEZ-GONZÁLEZ, E. & TUCCI, M., 2006. Cross-correlation of the cosmic microwave background and radio galaxies in real, harmonic and wavelet spaces: detection of the integrated Sachs-Wolfe effect and dark energy constraints. *MNRAS*, **365**, 891–901.
- WAKE, D. A., SHETH, R. K., NICHOL, R. C., BAUGH, C. M., BLAND-HAWTHORN, J. ET AL., 2008. The 2dF-SDSS LRG and QSO survey: Evolution of the clustering of Luminous Red Galaxies since $z = 0.6$. *ArXiv e-prints*, **802**.
- WANG, Y., 2007. Differentiating dark energy and modified gravity with galaxy redshift surveys. *ArXiv e-prints*, **710**.
- ZEHAVI, I., EISENSTEIN, D. J., NICHOL, R. C., BLANTON, M. R., HOGG, D. W., BRINKMANN, J., LOVEDAY, J., MEIKSIN, A., SCHNEIDER, D. P. & TEGMARK, M., 2005. The Intermediate-Scale Clustering of Luminous Red Galaxies. *ApJ*, **621**, 22–31.
- ZHANG, P., LIGUORI, M., BEAN, R. & DODELSON, S., 2007. Probing Gravity at Cosmological Scales by Measurements which Test the Relationship between Gravitational Lensing and Matter Overdensity. *Physical Review Letters*, **99**(14), 141302.