

Dr. Ashley J. Ross

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 Center for Cosmology and AstroParticle Physics
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Research Interests

Large-scale structure: improving accuracy and precision of cosmological measurements, optimizing operational efficiency, applying advanced statistical methods to large data sets

Academic Employment and Titles

The Ohio State University Research Assistant Professor, June 2024 - present
The Ohio State University Research Scientist, April 2018 - May 2024
The Ohio State University CCAPP Postdoctoral Research Fellow, Sep. 2014-April 2018
University of Portsmouth Visiting Research Fellow, Sep. 2014-Aug. 2017
University of Portsmouth Postdoctoral Research Fellow, Sep. 2012-Aug. 2014
University of Portsmouth Postdoctoral Research Associate, Sep. 2009-Aug. 2012

Education

Ph.D. Astronomy Department, University of Illinois at Urbana-Champaign (UIUC), conferred in Oct. 2009
 Dissertation: *N(th)-order correlation functions of galaxies from the Sloan Digital Sky Survey*
B.A. Carleton College, Northfield MN, conferred in 2004, Magna Cum Laude with Honors in Physics

Publication Record Brief Summary

ORCID: 0000-0002-7522-9083
 See <http://inspirehep.net/author/profile/A.J.Ross.1>; >250 records; h-factor 94; 6 1st-author with >100 citations, 1 1st-author with > 1500

Collaboration Membership

- Roman Galaxy Redshift Survey (GRS) Project Infrastructure Team
 - Co-lead for modeling the observing program** (prep started fall 2021)
 - Co-lead relative flux calibration** (prep started fall 2021)
 - Both tasks involve working closely with the Roman project to optimize the Roman GRS concerning both the achieved total number of redshifts and their distribution and understanding the selection function of those measurements.
- Dark Energy Spectroscopic Instrument (DESI)
 - Builder** (1.5 years total FTE service work)
 - Lead for production of LSS catalogs** (Spring 2020 to current)
 - This is an operations role, to enable quick turn-around from data with redshift determination to catalogs with matched synthetic random distributions and selection function details required to

produce unbiased clustering measurements and/or models of such measurements. In this role, I am also in charge of documenting the pipeline and resulting data products.

Co-lead of Year 1 Key Project 3 (Fall 2020 to current)

This DESI Key Project will use the year 1 data sample to deliver the 2-point functions and their covariance, including observational systematics. These measurements will be used for BAO distance and RSD structure growth measurements in other year 1 key projects.

Commissioning Instrument Scientist (March 2017 - May 2019)

Coordinated and oversaw the construction, installation, and operation of the DESI commissioning instrument, successfully installed on the Mayall Telescope in March 2019 and operated April 2019 - May 2019

- **SDSS-IV Extended Baryon Oscillation Spectroscopic Survey (eBOSS)**

Catalog Scientist (March 2018 - Summer 2020)

This was a Management Committee level position that served as a link between the operations, pipeline, and science working groups. The CS crafts and monitors the schedule for creating and testing the large scale structure catalogs in preparation for science publications, and maintains a repository for access to those catalogs and test results. They communicate with the working group leads and the rest of the management team to ensure the timely availability of the catalogs. They specifically work closely with the quasar redshift team to assure the quality of the final quasar catalog.

Co-chair of galaxy and quasar cosmology working group (May 2013 - May 2017)

Duties included: provide a forum for scientific discussions and the guidance/co-ordination of projects and to coordinate 1) early data analysis to test targeting algorithms and samples validity for science, 2) predictions for the measurements to be made by the surveys, feeding this work back to the targeting group, and contribute to the documents required and 3) development of the methodology and simulations required to understand the data.

- **Dark Energy Survey (DES)**

Builder (At least 2 years FTE service work)

Co-coordinator of the large-scale structure working group (Oct. 2014 - Nov. 2018)

Duties included: Serve on DES Science Committee, Organize scientific efforts utilizing large-scale structure analyses, including, but not limited to, DES Key Projects; organize forums necessary to allow scientific discussions and timely dissemination of results across the collaboration

Co-convener for the large-scale structure 2-point clustering analysis group (Nov. 2011 - Oct. 2014)

Duties included: Coordination of clustering analyses on data and simulation, managing sessions at collaboration meetings

Contributed to analyses of collaboration “data challenge” simulated data (catalog construction, treatment of photozs, correlation function measurements)

- **SDSS-III Baryon Oscillation Spectroscopic Survey (BOSS)**

Produced the weights to account for observational systematics effects on selection for all galaxy large-scale structure catalogs

Presentations at Meetings/Conferences (non-collaboration)

- *A pedagogical description of constructing “large-scale structure catalogs” for galaxy redshift surveys* Parity Violation From Home (remote and pre-recorded) October 2023 (invited)
- *Pathway to measuring robust large-scale structure statistics for primordial non-Gaussianity and beyond* A Cosmic Window to Fundamental Physics: Primordial Non-Gaussianity (PNG) and Beyond, September 21st 2022 (invited)
- *Measuring the Properties of Dark Energy with Galaxy Surveys* COSMO-18, IBS Science and Culture Center, Daejeon, Korea, August 29th, 2018 (invited)
- *The Status of Constraints on Dark Energy from Baryon Acoustic Oscillation Scale Measurements* The 24th International Symposium on Particle, Strings, and Cosmology, Case Western Reserve University, June 7th 2018
- *Measuring Galaxy Clustering at Gigaparsec Scales* Statistical Challenges in the Era of LSST, Oxford University, April 20th, 2018 (invited)
- *Cosmological results from the SDSS-III and (IV) (extended) Baryon Oscillation Spectroscopic Survey* TeV Particle Astrophysics Meeting, Cosmology Parallel Session, August 9th, 2017
- *Galaxy Clustering in the Dark Energy Survey* Dark Energy Survey Special Session, American Astronomical Society April 227th meeting, January, 2016
- *Early Science Results from the Dark Energy Survey* Invited Session: Exploring the Dark Side of the Universe: Progress and Open Questions, American Physical Society April meeting, April 13th, 2015
- *Galaxy Clustering in the Dark Energy Survey* Science Verification Data Cosmology III: Dark Energy Survey, American Physical Society April meeting, April 14th, 2015
- *Cosmology from BOSS Galaxy Clustering and Redshift-Space Distortions* BOSS Special Session, American Astronomical Society 225th meeting, January 5th, 2015
- *The SDSS-IV Extended Baryon Oscillation Spectroscopic Survey* National Astronomy Meeting, Portsmouth, United Kingdom, June 26th, 2014
- *The 3D clustering of SDSS-III DR9 BOSS Galaxies* National Astronomy Meeting, Manchester, United Kingdom, March 31st, 2012
- *The 3D Clustering of BOSS DR9 Galaxies* Cosmology and Galaxy Formation From SDSS-III/BOSS Special Session, American Astronomical Society 212th meeting, January 11th, 2012

Seminars and Colloquia

- *The Dark Energy Spectroscopic Instrument (DESI): Mapping the Structure of the Universe with a Galaxy Redshift Survey* Brookhaven National Laboratory, Cosmology Seminar, January 25th, 2024
- *The Dark Energy Spectroscopic Instrument (DESI): Mapping the Structure of the Universe with a Galaxy Redshift Survey* Ohio State University, Physics Department Colloquium, September 26th, 2023
- *Large-scale Structure revealed by the Dark Energy Spectroscopic Instrument* Ohio State University, Astronomy Department Colloquium, March 24th, 2022
- *Cosmology from Galaxy Redshift Surveys* The University of Waterloo, Astrophysics Seminar, April 24th, 2019
- *The Status of Observational Constraints on Dark Energy* The University of St. Andrews, Lunch Talk, April 23rd, 2018
- *The Status of Observational Constraints on Dark Energy* Kent State University CNR Seminar, November 15th, 2017

- *Robust and Precise Physical Measurements using Galaxy Surveys: Successes from BOSS and Lessons for the Future* LineA Webinar, September 15th, 2016
- *Robust and Precise Physical Measurements using Galaxy Surveys: Successes from BOSS and Lessons for the Future* University of Wyoming, Astronomy Colloquium, April 29th 2016
- *Robust and Precise Physical Measurements using Galaxy Surveys: Successes from BOSS and Lessons for the Future* University of Zurich Astrophysics Seminar, February 9th, 2016
- *Robust and Precise Physical Measurements using Galaxy Surveys: Successes from BOSS and Lessons for the Future* Ohio University Astrophysics Seminar, November 4th, 2015
- *Robust and Precise Physical Measurements using Galaxy Surveys: Successes from BOSS and Lessons for the Future* Lawrence Berkeley National Lab INPA Seminar, September 25th, 2015
- *Robust and Precise Physical Measurements using Galaxy Surveys: Successes from BOSS and Lessons for the Future* Stanford Cosmology Seminar, September 21st, 2015
- *Making Robust and Precise Physical Measurements Using Galaxy Surveys* Institute for Space Studies of Catalonia (IEEC), Spain, June 5th, 2014
- *Making Robust and Precise Physical Measurements Using Galaxy Surveys* University of Arizona Physics Colloquium, March 3rd, 2014
- *Making Robust and Precise Physical Measurements Using Galaxy Surveys* Physics and Astronomy Department, Stony Brook University, Feb 12th, 2014
- *Making Robust and Precise Physical Measurements Using Galaxy Surveys* Lawrence Berkeley National Laboratory Research Progress Meeting, January 19th, 2014
- *Measurement of the Baryon Acoustic Oscillation Scale using Red and Blue Galaxies from the Baryon Oscillation Spectroscopic Survey* Institute for Theory and Computation Seminar, Harvard-Smithsonian Center for Astrophysics, Oct 8th, 2013
- *Making Robust and precise physical measurements using galaxy surveys* University of Illinois Astrophysics Colloquium, Jan 29th, 2013
- *First results from galaxy clustering in the SDSS-III BOSS survey* Durham University, Institute for Computational Cosmology, May 16th, 2012
- *First results from galaxy clustering in the SDSS-III BOSS survey* Royal Observatory Edinburgh, Institute for Astronomy, May 2nd, 2012
- *Ameliorating systematic errors in measurements of the large scale clustering of galaxies* Universidad Autónoma de Madrid, Institute of Theoretical Physics, March 5th, 2012
- *The Information Content Encoded in the Clustering of Galaxies* Lawrence Berkeley National Laboratory Research Progress Meeting, January 19th, 2012
- *Ameliorating systematic errors in measurements of the large scale clustering of galaxies* University of Pittsburgh, Particle-physics, Astrophysics and Cosmology Center, January 13th, 2012
- *Determining the Large-Scale Structure of the Universe using Photometric Redshifts* University of Nottingham Astronomy Department, November 16th, 2011
- *Determining the Large-Scale Structure of the Universe using Photometric Redshifts* Cambridge University Department of Applied Math and Theoretical Physics, May 9th, 2011
- *Measuring and Analyzing Galaxy Clustering with Photometric Surveys* Lawrence Berkeley National Lab Institute for Nuclear and Particle Astrophysics, April 1, 2011
- *Measuring and Analyzing Galaxy Clustering with Photometric Surveys* Yale University Astronomy Department, October 28th, 2010
- *Understanding the Clustering of Faint Red Galaxies* University of Pennsylvania Astronomy Department, October 26th, 2010
- *The Effects of Redshift Space Distortions on Angular Clustering Measurements* University College London Astronomy Department, September 16th, 2010
- *Measuring and Analyzing the Clustering of Photometrically Selected Samples of Galaxies* Institute for Space Studies of Catalonia (IEEC), Spain, March 17th, 2010

Outreach

- Organized and participated in lesson/demo on solar system sizes and distances at Innis Elementary School, March 21st, 2017 and March 22nd, 2016
- Organized and participated in CCAPP's participation in Science Day at Innis Elementary School, Dec. 10th, 2015; all-day event included our contribution of an interactive presentation about traveling to the Moon, for students aged 6-9

Teaching and Student Supervision

- Spring 2022 - current: Co-advising Alberto Rosado's Ph.D. studies at Ohio University through a partnership with Professor Hee-Jong Seo
- Fall 2018 - Summer 2023: Primary non-faculty mentor for Kevin Fanning's Ph.D. studies
- Spring 2017- Summer 2022: Primary non-faculty mentor for Hui Kong's Ph.D. studies
- Spring 2016-Summer 2021: Co-advised Mehdi Rezaie's Ph.D. studies at Ohio University through a partnership with Professor Hee-Jong Seo
- Fall 2014- summer 2019: Helped mentor Sujeong Lee throughout her Ph.D. studies
- Spring 2017: Served as primary mentor for Skyla Ferguson's high school senior year project on cosmological distance measurements.
- Summer 2016: Helped plan and lectured for physics portion of OSU summer bridge program, a three week program to prepare incoming first year undergraduates.
- Summer 2016: Hosted undergraduate Benjamin Camacho for a summer project on eBOSS LRG observational systematic concerns; work was incorporated into publication in Bautista et al. (2018).
- Fall 2012 - Spring 2016: 2nd-supervisor for Matteo Tellarini's Ph.D. project on primordial non-Gaussianity and large-scale structure
- Fall 2012 and 2013: Lectured on Cosmic Microwave Background for M371 "Modern Astrophysics", a University of Portsmouth course for 3rd Year Math students
- Summer 2012: Supervised undergraduate summer research project of Will Green who compared the methods and galaxy samples used for obtaining baryon acoustic oscillation (BAO) constraints in a Dark Energy Survey (DES) mock galaxy catalog.
- Summer 2011: Supervised undergraduate summer research project of Chris Frohmaier, who investigated systematic differences in the photometry of SDSS DR7 and DR8 data and its effect on the selection of galaxy catalogs.
- Summer 2007, 2008, 2009: Taught Astronomy 100 "Introduction to Astronomy" at the University of Illinois. This was the full semester course load compressed to four weeks.

Service

- Peer review for NASA Keck observing proposals and NASA ATP grant proposals
- Peer review for many (>5 in past year) journal articles (MNRAS, ApJ, A&A, JCAP, and Proceedings of the (U.S.) National Academy of Sciences).
- Co-organized CCAPP seminars in 2018-2019 Academic year
- Served as Institute of Cosmology & Gravitation postdoctoral representative to communicate concerns of postdoctoral researchers to permanent staff and organize informal meetings, from Oct. 2009- Aug. 2014.

Referees

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Publication List

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All stats based on <http://inspirehep.net/author/profile/A.J.Ross.1>

Summary

As of April 10th, 2024, I was an author of more than¹ 250 citeable papers (h index 94).

50 Most Significant Publications

Below, I include details for the works I consider most significant (in approximate order of significance weighted by a combination of recency, my contribution, and the study's importance). I include the details for all 20 of the publications where I was at least one of the following: 1st author, corresponding author, or supervisor of 1st author. I also include the citation count for any with > 50.

[1] *The Clustering of the SDSS DR7 Main Galaxy Sample I: A 4 per cent Distance Measure at $z=0.15$*
Ross, A. J., Samushia, L., Howlett, C., Percival, W., Burden, A., Manera, M. 2015, MNRAS 449, 835

This work was led by AJR, and was done in tandem with Howlett et al. below. He conceived of the project and decided on the analysis performed. He wrote over 90% of the text, and made all of the figures.

1,517 citations

[2] *The clustering of galaxies in the completed SDSS-III Baryon Oscillation Spectroscopic Survey: cosmological analysis of the DR12 galaxy sample*

Alam, S., et al. 2017, MNRAS, 470, 2617 (alphabetical author list)

AJR wrote in sections 1, 2, 3, 5, 7, and 8; made Fig. 3; calculated correlation function BAO statistics and analyzed them in conjunction with power spectrum BAO statistics; edited, advised, and discussed interpretation throughout the lifetime of the project. This was part of a coordinated release of SDSS-III BOSS DR12 analyses.

2,437 citations

[3] *The clustering of galaxies in the SDSS-III Baryon Oscillation Spectroscopic Survey: analysis of potential systematics*

Ross, A. J., et al. 2012, MNRAS, 424, 564

This work was led by AJR. He designed and undertook all statistical tests except those in section 6.1, and developed the methods applied to ameliorate systematic effects, where they were found. He wrote 80% of the draft text and made 25 out of the 30 figures. The lead tier of authors undertook the remainder of the work, with other co-authors involved in obtaining the BOSS data used, and contributing to the final editing and polishing of the text.

257 citations

[4] *Ameliorating Systematic Uncertainties in the Angular Clustering of Galaxies: A Study using SDSS-III*

Ross, A. J., et al. 2011a, MNRAS, 417, 1530

This work was led by AJR. He created the galaxy catalog used in the analysis. He tested the clustering of these galaxies against potential systematic effects and designed methods to ameliorate any systematic effects. He designed all of tests applied, calculated all statistics presented himself, wrote over 90% of the draft text, and generated all of the figures.

171 citations

¹ By my count, 13 of the papers on the inspire site are by someone with a similar name to mine. None have more than 7 citations.

[5] *The clustering of galaxies in the completed SDSS-III Baryon Oscillation Spectroscopic Survey: Observational systematics and baryon acoustic oscillations in the correlation function*

Ross, A. J., et al. 2017, MNRAS, 464, 1168

This work was led by AJR. He conceived of the project and decided on the analysis performed. He wrote over 90% of the text, made all of the figures and performed all of the analysis except for the results presented in Appendix D.

237 citations

[6] *DESI 2024 III: Baryon Acoustic Oscillations from Galaxies and Quasars*

Adame, A., G. et al. 2024, arXiv:2404.03000 (alphabetical author list)

Contribution from AJR: Wrote sections 2 and 5.3 made figure 1 and provided the scripts to make figures 5 and 6, edited and advised throughout. Was involved throughout the lifetime of the project, with constant discussion and interpretation of results.

[7] *DESI 2024 VI: Cosmological Constraints from the Measurements of Baryon Acoustic Oscillations*

Adame, A., G. et al. 2024, arXiv:2404.03002 (alphabetical author list)

Contribution from AJR: Wrote section 2.2, advised throughout the lifetime of the project, including on interpretation of the results and how to present them.

[8] *The clustering of galaxies in the SDSS-III Baryon Oscillation Spectroscopic Survey: Baryon Acoustic Oscillations in the Data Release 10 and 11 Galaxy Samples*

Anderson, L., et al. 2014, MNRAS, 441, 24 (alphabetical author list)

Contribution from AJR: Wrote in sections 2, 4, and 6; made Figs 4,5,6,10,11,12,16, and 17; calculated all isotropic correlation function BAO statistics and analyzed them in conjunction with power spectrum BAO statistics; helped define new systematic weights; managed author list; edited, advised, and discussed interpretation throughout the lifetime of the project, part of a coordinated release of SDSS-III BOSS DR11 analyses

1,401 citations

[9] *The Completed SDSS-IV extended Baryon Oscillation Spectroscopic Survey: Large-scale structure catalogues for cosmological analysis*

Ross, A. J., et al. 2020, MNRAS, 4980, 2, 2354-2371

This work was led by AJR in his role as eBOSS catalog scientist, describing the final LSS data used for eBOSS cosmological analysis. He wrote 80% of the text and made 10 out of 11 figures.

122 citations

[10] *The clustering of the SDSS-IV extended Baryon Oscillation Spectroscopic Survey DR14 quasar sample: first measurement of baryon acoustic oscillations between redshift 0.8 and 2.2*

Ata, M., et al., 2018, MNRAS, 473, 4773, (alphabetical author list, **AJR corresponding author**)

This work was led by AJR in his role as working group leader. He wrote a plurality of the text, performed all of the correlation function analysis, and made 11 out of 15 figures.

381 citations

[11] *The Commissioning Instrument for the Dark Energy Spectroscopic Instrument*

Ross, A. J., et al. 2018, SPIE Proc., 10702, 1070280

This work was led by AJR in his role as DESI Commissioning Instrument Scientist. It describes the design and plan for the operation of the Commissioning Instrument.

[12] *Completed SDSS-IV extended Baryon Oscillation Spectroscopic Survey: Cosmological implications from two decades of spectroscopic surveys at the Apache Point Observatory*

Alam, S., et al., Phys. Rev. D, vol. 103, 2021 (alphabetical author list)

AJR helped produce the input BAO measurements and advised on their use. He reviewed results and their interpretation throughout process and edited text.

872 citations

[13] *Improved Primordial Non-Gaussianity Constraints from Measurements of Galaxy Clustering and the Integrated Sachs-Wolfe Effect*

Giannantonio, T., **Ross, A. J.**, et al. 2014, Phys. Rev. D, 89, 023511

AJR created LRG catalogs used in the analysis, advised on treatment of all galaxy samples, advised on analysis techniques, provided consistency checks, made Figs. 9 and 10, wrote text in III B and D and edited.

145 citations

[14] *The Clustering of the SDSS Main Galaxy Sample II: Mock galaxy catalogues and a measurement of the growth of structure from Redshift Space Distortions at $z=0.15$*

Howlett, C., **Ross, A. J.**, Samushia, L., Percival, W., Manera, M. 2015, MNRAS, 449, 848

AJR conceived of project and worked with Ph.D. student C. Howlett to finish it in every phase. (from sample definition, to model implementation, to interpretation of results, etc.).

225 citations

[15] *Dark Energy Survey Year 1 Results: Measurement of the Baryon Acoustic Oscillation scale in the distribution of galaxies to redshift 1*

Abbott, T. M. C., et al., 2019, MNRAS, 483,4866 (alphabetical author list, **AJR corresponding author**)

This work was led by AJR in his role as working group leader. He wrote a plurality of the text, and made all of figures, except for 1.

173 citations

[16] *The clustering of galaxies in the SDSS-III Baryon Oscillation Spectroscopic Survey: Baryon Acoustic Oscillations in the Data Release 9 Spectroscopic Galaxy Sample*

Anderson L. et al., 2012, MNRAS, 427, 3435 (alphabetical author list)

AJR calculated the (un-reconstructed) correlation functions that were used, co-wrote text appearing in Section 3 and Appendix A, managed/produced author list, and edited.

956 citations

[17] *Primordial non-Gaussianity from the completed SDSS-IV extended Baryon Oscillation Spectroscopic Survey – I: Catalogue preparation and systematic mitigation*

Rezaie, M., **Ross, A. J.**, et al. 2021 MNRAS 506 3, 3439

AJR advised and helped plan the work throughout the lifetime of the project, which was part of M. Rezaie's Ph.D. thesis and was performed in coordination with paper II.

[18] *Primordial non-Gaussianity from the completed SDSS-IV extended Baryon Oscillation Spectroscopic Survey II: measurements in Fourier space with optimal weights*

Mueller, E.-M., Rezaie, M., Percival, W. J., **Ross, A. J.**, et al. 2022, MNRAS, 514, 3, 3396

In combination with paper I, AJR advised and helped interpret results throughout the lifetime of the project.

68 citations

[19] *Production of Alternate Realizations of DESI Fiber Assignment for Unbiased Clustering Measurement in Data and Simulations*

Lasker, J., Carnero Rosell, A., Myers, A. D., **Ross, A. J.** et al. 2024, arXiv:2404.03006

Contribution from AJR: Conceived of idea and advised throughout. Made figures 5 and 6, edited.

[20] *The Early Data Release of the Dark Energy Spectroscopic Instrument*

Adame, G. et al. 2023, arXiv:2306.06308 (alphabetical author list)

Contribution from AJR: Wrote section 4, which describes the DESI EDR large-scale structure catalogs and made figures 4, 5, and 6.

79 citations

[21] *Improving Galaxy Clustering Measurements with Deep Learning: analysis of the DECaLS DR7 data*
Rezaie, M., Seo, H.-J., **Ross, A. J.**, Bunescu, R. C. (2020), MNRAS, 495, 2, 1613

Contribution from AJR: Co-advised this research as part of Mehdi Rezaie's Ph.D. work. His neural net method for imaging systematics removal for galaxy clustering was first presented here-in.

[22] *The Clustering of Galaxies in SDSS-III DR9 Baryon Oscillation Spectroscopic Survey: Constraints on Primordial Non-Gaussianity*

Ross, A. J., et al. 2013, MNRAS, 428, 1116

This work was led by AJR. He conducted all of the statistical tests performed in the paper except those in Appendix C. He wrote over 90% of the draft text and generated all of the figures.

152 citations

[23] *Removing Imaging Systematics from Galaxy Clustering Measurements with Obiwan : Application to the SDSS-IV extended Baryon Oscillation Spectroscopic Survey Emission Line Galaxy Sample*

Kong, H., Burleigh, K. J., **Ross, A. J.**, et al. 2020, MNRAS, 499, 3, 3943

AJR advised Ph.D. students Kong and Burleigh throughout the lifetime of the project and made considerable edits to the text. The results of this work were part of Hui Kong's Ph.D. thesis at Ohio State.

[24] *First detection of the BAO signal from early DESI data*

Moon, J. et al. 2023, MNRAS, 4, 5406 (**Ross, A. J.** In alphabetical block that started after 4th author.)

AJR helped conceive of the project and advised throughout its lifetime. He wrote sections 2 and 4.3., provided BAO fitting code and advised on its use, and edited throughout.

[25] *The clustering of galaxies in the SDSS-III Baryon Oscillation Spectroscopic Survey: galaxy clustering measurements in the low redshift sample of Data Release 11*

Tojeiro, R., **Ross, A. J.**, et al. 2014, MNRAS, 440, 2222

AJR wrote sections 5 and 6., made figures 3, 4, 7, 8, 10, 11, 12, calculated all isotropic correlation function BAO statistics, edited, advised, and discussed interpretation throughout lifetime of project.

103 citations

[26] *The Clustering of Galaxies in the SDSS-III Baryon Oscillation Spectroscopic Survey: Including covariance matrix errors*

Percival, W. J., **Ross, A. J.**, et al. 2014, MNRAS, 439, 2531

AJR calculated all isotropic correlation function BAO statistics and edited, advised, and discussed interpretation throughout lifetime of project.

211 citations

[27] *Galaxy bispectrum, primordial non-Gaussianity and redshift space distortions*

Tellarini, M., **Ross, A. J.**, Tasinato, G., Wands, D. 2016, JCAP, 6, 014

AJR advised Ph.D. student M. Tellarini specifically on numerical analysis techniques, interpretation, and presentation throughout project (and generally as 2nd supervisor) and edited.

[28] *Halo-model analysis of the clustering of photometrically selected galaxies from SDSS*

Ross, A. J. & Brunner, R. J., 2009, MNRAS, 399, 878

This work was led by AJR, as part of his PhD thesis.. He conducted all of the statistical tests performed in the paper. He wrote over 90% of the draft text and generated all of the figures.

[29] *The completed SDSS-IV extended Baryon Oscillation Spectroscopic Survey: Large-scale Structure Catalogues and Measurement of the isotropic BAO between redshift 0.6 and 1.1 for the Emission Line Galaxy Sample*

Raichoor, A., de Mattia, A., **Ross, A. J.**, et al., 2020, MNRAS, 500, 3, 3254

AJR advised on the project throughout its lifetime, produced the BAO results, wrote section 5, made figures 11,12,14, and 15, and edited throughout.

81 citations

- [30]** *Dark Energy Survey Year 1 Results: Galaxy clustering for combined probes*
 Elvin-Poole, J., Crocce, M., and **Ross, A. J.**, et al., 2018, Phys. Rev. D 98, 042006
 AJR collaborated on all aspects of analysis and interpretation throughout the lifetime of the project and edited.
144 citations
- [31]** *Dark Energy Survey Year 1 Results: Cosmological Constraints from Galaxy Clustering and Weak Lensing*
 Abbott, T. M. C. et al., (alphabetical author list)
 AJR advised on interpretation and presentation throughout the lifetime of the project; wrote text on interpretation of χ^2 values.
1,100 citations
- [32]** *The clustering of galaxies in the SDSS-III DR10 Baryon Oscillation Spectroscopic Survey: no detectable colour dependence of distance scale or growth rate measurements*
Ross, A. J., et al. 2014, MNRAS, 437, 1109
 This work was led by AJR. He conceived of the project and decided on the analysis performed. He wrote over 80% of the text, made 16 of the 21 figures and performed all of the analysis except for the results presented in Section 6.
- [33]** *Producing a BOSS-CMASS sample with DES imaging*
 Lee, S., Huff, E., **Ross, A. J.**, et al., 2019, MNRAS, 489, 2, 2887
 AJR advised Ph.D. student S. Lee on all aspects of analysis throughout the lifetime of the project; edited.
- [34]** *Non-local bias in the halo bispectrum with primordial non-Gaussianity*
 Tellarini, M., **Ross, A. J.**, Tasinato, G., Wands, D. 2015, JCAP, 07, 004
 AJR advised Ph.D. student M. Tellarini specifically on numerical analysis techniques, interpretation, and presentation throughout project (and generally as 2nd supervisor), edited.
- [35]** *The Completed SDSS-IV extended Baryon Oscillation Spectroscopic Survey: BAO and RSD measurements from anisotropic clustering analysis of the Quasar Sample in configuration space between redshift 0.8 and 2.2*
 Hou, J., Sánchez, A. G., **Ross, A. J.**, et al., 2020, MNRAS, 500, 1, 1201
 AJR produced the BAO fit results, wrote section 5, and advised throughout the lifetime of the project.
167 citations
- [36]** *Dark Energy Survey Year 1 Results: Galaxy Sample for BAO Measurement*
 Crocce, M., **Ross, A. J.** et al., 2019, MNRAS, 482, 2807
 AJR provided criteria for assessing the optimality of samples for BAO analysis, conducted systematic analysis, produced figure 8, helped interpret all results, edited.
- [37]** *A Radial Measurement of the Galaxy Tidal Alignment Magnitude with BOSS Data*
 Martens, D., Hirata, C. M., **Ross, A. J.**, and Fang, X., 2018, 478, 711
 AJR advised on how to use BOSS data, the methodology applied, tests required prior to unblinding, and interpretation of results; edited.
- [38]** *Optimized clustering estimators for BAO measurements accounting for significant redshift uncertainty*
Ross, A. J., et al., 2017, MNRAS, 472, 4456
 This work was led by AJR. He conceived of the project and decided on the analysis performed. He wrote over 90% of the text and made 5 of 7 figures.

[39] *The Information Content of Anisotropic Baryon Acoustic Oscillation Scale Measurements*

Ross, A. J., Percival, W. J., Manera, M. 2015, MNRAS, 451, 1331

This work was led by AJR. He conceived of the project with WJP, determined most of the analytical results and all of the empirical results. He wrote over 80% of the text and made all of the figures.

[40] *Measuring Redshift-Space Distortions using Photometric Surveys*

Ross, A. J., Percival, W. J., Crocce, M., Cabre, A., & Gaztanaga, E., 2011b, MNRAS, 415, 2193

This work was led by AJR. He conducted all of the statistical tests performed in the paper. He wrote over 90% of the draft text and generated all of the figures himself.

[41] *Modeling the reconstructed BAO in Fourier space*

Seo, H.-J., Beutler, F., **Ross, A. J.**, Saito, S. 2016, MNRAS, 460, 2453

AJR helped conceive of project by developing pieces of the model the paper helps justify, advised on meaning of results throughout its lifetime, and edited.

[42] *Understanding the faint red galaxy population using large-scale clustering measurements from SDSS DR7*

Ross, A. J., Tojeiro, R., & Percival, W. J., 2011c, MNRAS, 413, 2078

This work was led by AJR. He conducted all of the statistical tests performed in the paper. He wrote over 80% of the draft text and generated all of the figures.

[43] *Evolution of the clustering of photometrically selected SDSS galaxies*

Ross, A. J., Percival, W. J., & Brunner R. J., 2010, MNRAS, 407, 420

This work was led by AJR. He conducted all of the statistical tests performed in the paper. He wrote over 80% of the draft text and generated all of the figures.

[44] *Normalization of the Matter Power Spectrum via Higher Order Angular Correlations of Luminous Red Galaxies*

Ross, A. J., Brunner, R. J., & Myers, A. D. 2008, ApJ, 682, 737

This work was led by AJR, as part of his PhD thesis. He conducted all of the statistical tests performed in the paper. He wrote over 90% of the draft text and generated all of the figures.

[45] *Higher Order Angular Galaxy Correlations in the SDSS: Redshift and Color Dependence on Nonlinear Bias*

Ross, A. J., Brunner, R. J., & Myers, A. D. 2007, ApJ, 665, 67

This work was led by AJR, as part of his PhD thesis. He conducted all of the statistical tests performed in the paper. He wrote over 90% of the draft text and generated all of the figures.

[46] *Precision Measurements of Higher Order Angular Galaxy Correlations Using 11 Million SDSS Galaxies*

Ross, A. J., Brunner, R. J., & Myers, A. D. 2006, ApJ, 649, 48

This work was led by AJR, as part of his PhD thesis. He conducted all of the statistical tests performed in the paper. He wrote over 90% of the draft text and generated all of the figures.

[47] *The Completed SDSS-IV extended Baryon Oscillation Spectroscopic Survey: measurement of the BAO and growth rate of structure of the emission line galaxy sample from the anisotropic power spectrum between redshift 0.6 and 1.1*

de Mattia, A., Ruhlmann-Kleider, A., Raichoor, A., **Ross, A. J.**, et al. 2021, MNRAS, 501, 4, 5616

AJR advised and helped analyze results throughout the lifetime of the project, especially with respect to the impact of imaging systematics.

151 citations

[48] *The DESI One-Percent Survey: Exploring the Halo Occupation Distribution of Luminous Red Galaxies and Quasi-Stellar Objects with AbacusSummit*

Yuan, S., Zhang, H., **Ross, A. J.**, et al. 2023, arXiv:2306.06314

AJR advised throughout the lifetime of the project, especially w.r.t. how best to the DESI LSS catalogs and 2-point functions and the results that would be most useful for the DESI year 1 key projects; edited throughout.

[49] *The clustering of galaxies in the completed SDSS-III Baryon Oscillation Spectroscopic Survey: Baryon Acoustic Oscillations in the Fourier-space*

Beutler, F., Seo, H.-J., **Ross, A. J.**, et al, 2017, MNRAS, 464, 3, 3409

AJR discussed methods for modeling the BAO signal and interpreting the results throughout lifetime of project; edited.

214 citations

[50] *The Completed SDSS-IV extended Baryon Oscillation Spectroscopic Survey: measurement of the BAO and growth rate of structure of the luminous red galaxy sample from the anisotropic correlation function between redshifts 0.6 and 1*

Bautista, J. et al. 2020, MNRAS 500, 1, 736 (**Ross, A. J.** 7th author)

AJR derived the results for combining correlated measurements presented in section 3.4 and co-wrote the text, advised on analysis throughout the lifetime of the project, coordinated on BAO analysis and contributed comparison “DR12 method” result, and edited throughout.

190 citations