

Yao-Yuan Mao

List of Publications

71 refereed journal papers, 1 submitted preprints, 11 selected white papers/research notes (marked with *)

- [84] J. Thornton, A. Amon, R. H. Wechsler, S. Adhikari, Y.-Y. Mao *et al.*, “The mass profiles of dwarf galaxies from Dark Energy Survey lensing,” [arXiv:2311.14659](#) [ADS]
- [83] K. B. W. McQuinn, Y.-Y. Mao, R. E. Cohen *et al.*, “Discovery and Characterization of Two Ultra Faint-Dwarfs Outside the Halo of the Milky Way: Leo M and Leo K,” [arXiv:2307.08738](#) [ADS]
- 2023 [82] L. Mezini, C. E. Fielder, A. R. Zentner, Y.-Y. Mao *et al.*, “The influence of subhaloes on host halo properties,” *MNRAS*, **526**, 4157 (2023) [[arXiv](#)][ADS]
- [81] E. Darragh-Ford, J. F. Wu, Y.-Y. Mao *et al.*, “Target Selection and Sample Characterization for the DESI LOW-Z Secondary Target Program,” *ApJ*, **954**, 149 (2023) [[arXiv](#)][ADS]
- [80] M. A. Troxel, C. Lin, A. Park *et al.* (LSST Dark Energy Science Collaboration), “A joint Roman Space Telescope and Rubin Observatory synthetic wide-field imaging survey,” *MNRAS*, **522**, 2801 (2023) [[arXiv](#)][ADS]
- [79] Z. Zhai, J. L. Tinker, A. Banerjee *et al.*, “The Aemulus Project. V. Cosmological Constraint from Small-scale Clustering of BOSS Galaxies,” *ApJ*, **948**, 99 (2023) [[arXiv](#)][ADS]
- [78] J. Prat, J. Zuntz, C. Chang *et al.* (LSST Dark Energy Science Collaboration), “The catalog-to-cosmology framework for weak lensing and galaxy clustering for LSST,” *The Open Journal of Astrophysics*, **6**, 13 (2023) [[arXiv](#)][ADS]
- [77] E. O. Nadler, P. Mansfield, Y. Wang *et al.*, “Symphony: Cosmological Zoom-in Simulation Suites over Four Decades of Host Halo Mass,” *ApJ*, **945**, 159 (2023) [[arXiv](#)][ADS]
- [76] K. B. W. McQuinn, Y.-Y. Mao, M. R. Buckley *et al.*, “Pegasus W: An Ultrafaint Dwarf Galaxy Outside the Halo of M31 Not Quenched by Reionization,” *ApJ*, **944**, 14 (2023) [[arXiv](#)][ADS]
- 2022 [75] K. Wang, Y.-Y. Mao, A. R. Zentner *et al.*, “Evidence of galaxy assembly bias in SDSS DR7 galaxy samples from count statistics,” *MNRAS*, **516**, 4003 (2022) [[arXiv](#)][ADS]
- [74] B. Dey, B. H. Andrews, J. A. Newman, Y.-Y. Mao *et al.*, “Photometric redshifts from SDSS images with an interpretable deep capsule network,” *MNRAS*, **515**, 5285 (2022) [[arXiv](#)][ADS]
- [73] *A. Drlica-Wagner, C. Prescod-Weinstein, H.-B. Yu *et al.*, “Report of the Topical Group on Cosmic Probes of Dark Matter for Snowmass 2021,” [arXiv:2209.08215](#) [ADS]
- [72] *K. Breivik, A. J. Connolly, K. E. S. Ford *et al.*, “From Data to Software to Science with the Rubin Observatory LSST,” [arXiv:2208.02781](#) [ADS]
- [71] S. Mau, E. O. Nadler, R. H. Wechsler *et al.* (DES Collaboration), “Milky Way Satellite Census. IV. Constraints on Decaying Dark Matter from Observations of Milky Way Satellite Galaxies,” *ApJ*, **932**, 128 (2022) [[arXiv](#)][ADS]
- [70] *L. Mezini, K. Wang, Y.-Y. Mao, A. R. Zentner, “Using Maximum Circular Velocity in Halo Occupation Distribution Models to Predict Galaxy Clustering,” *Research Notes of the American Astronomical Society*, **6**, 80 (2022) [ADS]
- [69] *M. Valluri, S. Chabanier, V. Irsic *et al.*, “Snowmass2021 Cosmic Frontier White Paper: Prospects for obtaining Dark Matter Constraints with DESI,” [arXiv:2203.07491](#) [ADS]
- [68] *K. Bechtol, S. Birrer, F.-Y. Cyr-Racine *et al.*, “Snowmass2021 Cosmic Frontier White Paper: Dark Matter Physics from Halo Measurements,” [arXiv:2203.07354](#) [ADS]
- [67] *Y.-Y. Mao, A. H. G. Peter, S. Adhikari *et al.*, “Snowmass2021: Vera C. Rubin Observatory as a Flagship Dark Matter Experiment,” [arXiv:2203.07252](#) [ADS]

- [66] *A. Banerjee, K. K. Boddy, F.-Y. Cyr-Racine *et al.*, “Snowmass2021 Cosmic Frontier White Paper: Cosmological Simulations for Dark Matter Physics,” [arXiv:2203.07049](#) [ADS]
- [65] J. F. Wu, J. E. G. Peek, E. J. Tollerud, Y.-Y. Mao *et al.*, “Extending the SAGA Survey (xSAGA). I. Satellite Radial Profiles as a Function of Host-galaxy Properties,” *ApJ*, **927**, 121 (2022) [[arXiv](#)][ADS]
- [64] M. M. Rau, C. B. Morrison, S. J. Schmidt *et al.* (LSST Dark Energy Science Collaboration), “A composite likelihood approach for inference under photometric redshift uncertainty,” *MNRAS*, **509**, 4886 (2022) [[arXiv](#)][ADS]
- [63] E. Kovacs, Y.-Y. Mao, M. Aguena *et al.* (LSST Dark Energy Science Collaboration), “Validating Synthetic Galaxy Catalogs for Dark Energy Science in the LSST Era,” *The Open Journal of Astrophysics*, **5**, 1 (2022) [[arXiv](#)][ADS]
- 2021 [62] J. Zuntz, F. Lanusse, A. I. Malz *et al.* (LSST Dark Energy Science Collaboration), “The LSST-DESC 3x2pt Tomography Optimization Challenge,” *The Open Journal of Astrophysics*, **4**, 13 (2021) [[arXiv](#)][ADS]
- [61] E. O. Nadler, A. Banerjee, S. Adhikari, Y.-Y. Mao, R. H. Wechsler, “The Effects of Dark Matter and Baryonic Physics on the Milky Way Subhalo Population in the Presence of the Large Magellanic Cloud,” *ApJL*, **920**, L11 (2021) [[arXiv](#)][ADS]
- [60] A. Drlica-Wagner, J. L. Carlin, D. L. Nidever *et al.*, “The DECam Local Volume Exploration Survey: Overview and First Data Release,” *ApJS*, **256**, 2 (2021) [[arXiv](#)][ADS]
- [59] J. L. Tinker, J. Cao, M. Alpaslan, J. DeRose, Y.-Y. Mao *et al.*, “Probing the galaxy-halo connection with total satellite luminosity,” *MNRAS*, **505**, 5370 (2021) [[arXiv](#)][ADS]
- [58] Y. Wang, E. O. Nadler, Y.-Y. Mao *et al.*, “UniverseMachine: Predicting Galaxy Star Formation over Seven Decades of Halo Mass with Zoom-in Simulations,” *ApJ*, **915**, 116 (2021) [[arXiv](#)][ADS]
- [57] E. O. Nadler, A. Drlica-Wagner, K. Bechtol *et al.* (DES Collaboration), “Constraints on Dark Matter Properties from Observations of Milky Way Satellite Galaxies,” *PRL*, **126**, 091101 (2021) [[arXiv](#)][ADS]
- [56] R. Zhou, J. A. Newman, Y.-Y. Mao *et al.*, “The clustering of DESI-like luminous red galaxies using photometric redshifts,” *MNRAS*, **501**, 3309 (2021) [[arXiv](#)][ADS]
- [55] LSST Dark Energy Science Collaboration (LSST DESC), “The LSST DESC DC2 Simulated Sky Survey,” *ApJS*, **253**, 31 (2021) [[arXiv](#)][ADS]
- [54] Y.-Y. Mao, M. Geha, R. H. Wechsler *et al.*, “The SAGA Survey. II. Building a Statistical Sample of Satellite Systems around Milky Way-like Galaxies,” *ApJ*, **907**, 85 (2021) [[arXiv](#)][ADS]
- [53] *LSST Dark Energy Science Collaboration, “DESC DC2 Data Release Note,” [arXiv:2101.04855](#) [ADS]
- 2020 [52] C. E. Fielder, Y.-Y. Mao, A. R. Zentner *et al.*, “Illuminating dark matter halo density profiles without subhaloes,” *MNRAS*, **499**, 2426 (2020) [[arXiv](#)][ADS]
- [51] J.-z. Cao, J. L. Tinker, Y.-Y. Mao, R. H. Wechsler, “Constraining the scatter in the galaxy-halo connection at Milky Way masses,” *MNRAS*, **498**, 5080 (2020) [[arXiv](#)][ADS]
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- [49] E. O. Nadler, A. Banerjee, S. Adhikari, Y.-Y. Mao, R. H. Wechsler, “Signatures of Velocity-dependent Dark Matter Self-interactions in Milky Way-mass Halos,” *ApJ*, **896**, 112 (2020) [[arXiv](#)][ADS]

- [48] E. O. Nadler, R. H. Wechsler, K. Bechtol, Y.-Y. Mao *et al.* (DES Collaboration), “Milky Way Satellite Census. II. Galaxy-Halo Connection Constraints Including the Impact of the Large Magellanic Cloud,” *ApJ*, 893, 48 (2020) [arXiv][ADS]
- [47] S. Mau, W. Cerny, A. B. Pace *et al.*, “Two Ultra-faint Milky Way Stellar Systems Discovered in Early Data from the DECam Local Volume Exploration Survey,” *ApJ*, 890, 136 (2020) [arXiv][ADS]
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- [45] D. Korytov, A. Hearin, E. Kovacs *et al.* (LSST Dark Energy Science Collaboration), “CosmoDC2: A Synthetic Sky Catalog for Dark Energy Science with LSST,” *ApJS*, 245, 26 (2019) [arXiv][ADS]
- [44] K. Wang, Y.-Y. Mao, A. R. Zentner *et al.*, “How to optimally constrain galaxy assembly bias: supplement projected correlation functions with count-in-cells statistics,” *MNRAS*, 488, 3541 (2019) [arXiv][ADS]
- [43] C. E. Fielder, Y.-Y. Mao, J. A. Newman, A. R. Zentner, T. C. Licquia, “Predictably missing satellites: subhalo abundances in Milky Way-like haloes,” *MNRAS*, 486, 4545 (2019) [arXiv][ADS]
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- [41] J. DeRose, R. H. Wechsler, J. L. Tinker, M. R. Becker, Y.-Y. Mao *et al.*, “The AEMULUS Project. I. Numerical Simulations for Precision Cosmology,” *ApJ*, 875, 69 (2019) [arXiv][ADS]
- [40] Z. Zhai, J. L. Tinker, M. R. Becker, J. DeRose, Y.-Y. Mao *et al.*, “The Aemulus Project. III. Emulation of the Galaxy Correlation Function,” *ApJ*, 874, 95 (2019) [arXiv][ADS]
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- [37] T. McClintock, E. Rozo, M. R. Becker, J. DeRose, Y.-Y. Mao *et al.*, “The Aemulus Project. II. Emulating the Halo Mass Function,” *ApJ*, 872, 53 (2019) [arXiv][ADS]
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- [30] Y.-Y. Mao, E. Kovacs, K. Heitmann *et al.* (LSST Dark Energy Science Collaboration), “DESCQA: An Automated Validation Framework for Synthetic Sky Catalogs,” *ApJS*, 234, 36 (2018) [arXiv][ADS]

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- [18] Y. D. Hezaveh, N. Dalal, D. P. Marrone, Y.-Y. Mao *et al.*, “Detection of Lensing Substructure Using ALMA Observations of the Dusty Galaxy SDP.81,” *ApJ*, **823**, 37 (2016) [arXiv][ADS]
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