

Yao-Yuan Mao

List of Publications

**49 refereed journal papers and several white papers (selected one listed below)
with 1800+ total citations from 1200+ citing papers, and an h -index = 25.**

- [57] LSST Dark Energy Science Collaboration, “The LSST DESC DC2 Simulated Sky Survey,” [arXiv:2010.05926](#) [ADS]
- [56] 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,” [arXiv:2008.12783](#) [ADS]
- [55] E. O. Nadler, A. Drlica-Wagner, K. Bechtol *et al.*, “Milky Way Satellite Census. III. Constraints on Dark Matter Properties from Observations of Milky Way Satellite Galaxies,” [arXiv:2008.00022](#) [ADS]
- [54] R. Zhou, J. A. Newman, Y.-Y. Mao *et al.*, “The Clustering of DESI-like Luminous Red Galaxies Using Photometric Redshifts,” [arXiv:2001.06018](#) [ADS]
- [53] J. L. Tinker, J. Cao, M. Alpaslan, J. DeRose, Y.-Y. Mao *et al.*, “Probing the galaxy-halo connection with total satellite luminosity,” [arXiv:1911.04507](#) [ADS]
- 2020 [52] C. E. Fielder, Y.-Y. Mao, A. R. Zentner *et al.*, “Illuminating Dark Matter Halo Density Profiles Without Subhaloes,” *MNRAS* (2020, in press) [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]
- [50] K. Wang, Y.-Y. Mao, A. R. Zentner *et al.*, “Concentrations of dark haloes emerge from their merger histories,” *MNRAS*, 498, 4450 (2020) [arXiv][ADS]
- [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]
- 2019 [46] T. S. Li, S. E. Koposov, D. B. Zucker *et al.* (S5 Collaboration), “The southern stellar stream spectroscopic survey (S⁵): Overview, target selection, data reduction, validation, and early science,” *MNRAS*, 490, 3508 (2019) [arXiv][ADS]
- [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,” *ApJ*, 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](#)]
- [42] MSE Science Team, “The Detailed Science Case for the Maunakea Spectroscopic Explorer, 2019 edition,” [arXiv:1904.04907](#) [[ADS](#)]
- [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](#)]
- [39] E. O. Nadler, Y.-Y. Mao, G. M. Green, R. H. Wechsler, “Modeling the Connection between Subhalos and Satellites in Milky Way-like Systems,” *ApJ*, **873**, 34 (2019) [[arXiv](#)][[ADS](#)]
- [38] A. Drlica-Wagner, Y.-Y. Mao, S. Adhikari *et al.*, “Probing the Fundamental Nature of Dark Matter with the Large Synoptic Survey Telescope,” [arXiv:1902.01055](#) [[ADS](#)]
- [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](#)]
- 2018 [36] J. L. Tinker, C. Hahn, Y.-Y. Mao, A. R. Wetzel, “Halo histories versus galaxy properties at $z = 0$ - III. The properties of star-forming galaxies,” *MNRAS*, **478**, 4487 (2018) [[arXiv](#)][[ADS](#)]
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- [34] D. Campbell, F. C. van den Bosch, N. Padmanabhan, Y.-Y. Mao *et al.*, “The galaxy clustering crisis in abundance matching,” *MNRAS*, **477**, 359 (2018) [[arXiv](#)][[ADS](#)]
- [33] E. O. Nadler, Y.-Y. Mao, R. H. Wechsler, S. Garrison-Kimmel, A. Wetzel, “Modeling the Impact of Baryons on Subhalo Populations with Machine Learning,” *ApJ*, **859**, 129 (2018) [[arXiv](#)][[ADS](#)]
- [32] Y.-Y. Mao, A. R. Zentner, R. H. Wechsler, “Beyond assembly bias: exploring secondary halo biases for cluster-size haloes,” *MNRAS*, **474**, 5143 (2018) [[arXiv](#)][[ADS](#)]
- [31] A. Tenneti, Y.-Y. Mao, R. A. C. Croft *et al.*, “The radial acceleration relation in disc galaxies in the MassiveBlack-II simulation,” *MNRAS*, **474**, 3125 (2018) [[arXiv](#)][[ADS](#)]
- [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](#)]
- [29] J. U. Lange, F. C. van den Bosch, A. Hearin *et al.*, “Brightest galaxies as halo centre tracers in SDSS DR7,” *MNRAS*, **473**, 2830 (2018) [[arXiv](#)][[ADS](#)]
- 2017 [28] J. L. Tinker, A. R. Wetzel, C. Conroy, Y.-Y. Mao, “Halo histories versus Galaxy properties at $z = 0$ - I. The quenching of star formation,” *MNRAS*, **472**, 2504 (2017) [[arXiv](#)][[ADS](#)]
- [27] A. S. Villarreal, A. R. Zentner, Y.-Y. Mao *et al.*, “The immitigable nature of assembly

- bias: the impact of halo definition on assembly bias,” *MNRAS*, 472, 1088 (2017) [[arXiv](#)][[ADS](#)]
- [26] A. P. Hearin, D. Campbell, E. Tollerud *et al.*, “Forward Modeling of Large-scale Structure: An Open-source Approach with Halotools,” *AJ*, 154, 190 (2017) [[arXiv](#)][[ADS](#)]
- [25] H. Desmond, Y.-Y. Mao, R. H. Wechsler, R. A. Crain, J. Schaye, “On the galaxy-halo connection in the EAGLE simulation,” *MNRAS*, 471, L11 (2017) [[arXiv](#)][[ADS](#)]
- [24] M. Geha, R. H. Wechsler, Y.-Y. Mao *et al.*, “The SAGA Survey. I. Satellite Galaxy Populations around Eight Milky Way Analogs,” *ApJ*, 847, 4 (2017) [[arXiv](#)][[ADS](#)]
- [23] Y. Lu, A. Benson, A. Wetzel, Y.-Y. Mao *et al.*, “The Importance of Preventive Feedback: Inference from Observations of the Stellar Masses and Metallicities of Milky Way Dwarf Galaxies,” *ApJ*, 846, 66 (2017) [[arXiv](#)][[ADS](#)]
- [22] B. V. Lehmann, Y.-Y. Mao, M. R. Becker, S. W. Skillman, R. H. Wechsler, “The Concentration Dependence of the Galaxy-Halo Connection: Modeling Assembly Bias with Abundance Matching,” *ApJ*, 834, 37 (2017) [[arXiv](#)][[ADS](#)]
- 2016 [21] A. Drlica-Wagner, K. Bechtol, S. Allam *et al.*, “An Ultra-faint Galaxy Candidate Discovered in Early Data from the Magellanic Satellites Survey,” *ApJL*, 833, L5 (2016) [[arXiv](#)][[ADS](#)]
- [20] Y. Lu, A. Benson, Y.-Y. Mao *et al.*, “The Connection between the Host Halo and the Satellite Galaxies of the Milky Way,” *ApJ*, 830, 59 (2016) [[arXiv](#)][[ADS](#)]
- [19] Y. Wang, F. R. Pearce, A. Knebe *et al.*, “Sussing merger trees: stability and convergence,” *MNRAS*, 459, 1554 (2016) [[arXiv](#)][[ADS](#)]
- [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](#)]
- [17] A. J. Deason, Y.-Y. Mao, R. H. Wechsler, “The Eating Habits of Milky Way-mass Halos: Destroyed Dwarf Satellites and the Metallicity Distribution of Accreted Stars,” *ApJ*, 821, 5 (2016) [[arXiv](#)][[ADS](#)]
- 2015 [16] P. Behroozi, A. Knebe, F. R. Pearce *et al.*, “Major mergers going Notts: challenges for modern halo finders,” *MNRAS*, 454, 3020 (2015) [[arXiv](#)][[ADS](#)]
- [15] A. Drlica-Wagner, K. Bechtol, E. S. Rykoff *et al.* (DES Collaboration), “Eight Ultra-faint Galaxy Candidates Discovered in Year Two of the Dark Energy Survey,” *ApJ*, 813, 109 (2015) [[arXiv](#)][[ADS](#)]
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- [13] P. A. Thomas, J. Onions, D. Tweed *et al.*, “Sussing Merger Trees: A proposed Merger Tree data format,” [arXiv:1508.05388](#) [[ADS](#)]
- 2014 [12] J. Lee, S. K. Yi, P. J. Elahi *et al.*, “Sussing merger trees: the impact of halo merger trees on galaxy properties in a semi-analytic model,” *MNRAS*, 445, 4197 (2014) [[arXiv](#)][[ADS](#)]
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- [10] Y.-Y. Mao, L. E. Strigari, R. H. Wechsler, “Connecting direct dark matter detection experiments to cosmologically motivated halo models,” *PRD*, **89**, 063513 (2014) [[arXiv](#)][[ADS](#)]
- 2013 [9] C. Srisawat, A. Knebe, F. R. Pearce *et al.*, “Sussing Merger Trees: The Merger Trees Comparison Project,” *MNRAS*, **436**, 150 (2013) [[arXiv](#)][[ADS](#)]
- [8] H.-Y. Wu, O. Hahn, R. H. Wechsler, P. S. Behroozi, Y.-Y. Mao, “Rhapsody. II. Subhalo Properties and the Impact of Tidal Stripping From a Statistical Sample of Cluster-size Halos,” *ApJ*, **767**, 23 (2013) [[arXiv](#)][[ADS](#)]
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- [6] H.-Y. Wu, O. Hahn, R. H. Wechsler, Y.-Y. Mao, P. S. Behroozi, “Rhapsody. I. Structural Properties and Formation History from a Statistical Sample of Re-simulated Cluster-size Halos,” *ApJ*, **763**, 70 (2013) [[arXiv](#)][[ADS](#)]
- 2012 [5] TWQCD Collaboration, “Pseudoscalar meson in two flavors QCD with the optimal domain-wall fermion,” *Physics Letters B*, **717**, 420 (2012) [[ADS](#)]
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- 2010 [3] W.-S. Hou, Y.-Y. Mao, C.-H. Shen, “Leading effect of CP violation with four generations,” *PRD*, **82**, 036005 (2010) [[arXiv](#)][[ADS](#)]
- 2009 [2] Y.-Y. Mao, T.-W. Chiu, “Topological susceptibility to the one-loop order in chiral perturbation theory,” *PRD*, **80**, 034502 (2009) [[arXiv](#)][[ADS](#)]
- [1] C.-F. Lee, Y.-Y. Mao, B. Reipurth, “Infall and Rotation Motions in the HH 111 Protostellar System: A Flattened Envelope in Transition to a Disk?” *ApJ*, **694**, 1395 (2009) [[arXiv](#)][[ADS](#)]

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