ChangHoon Hahn

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APPOINTMENTS

Princeton University, Department of Astrophysical Sciences — 2020 -
Associate Research Scholar — 2023 -
Postdoctoral Research Associate

Lawrence Berkeley National Laboratory and UC Berkeley — 2017 - 2020
Postdoctoral Fellow

EDUCATION

New York University — Ph.D. in Physics — 2011 - 2017
Advisors : Michael R. Blanton and Roman Scoccimarro
Thesis : *Galaxies and their Host Dark Matter Structures*

Rutgers University — B.Sc. in Astrophysics — 2007 - 2011
Advisors : Andrew J. Baker and Jerry A. Sellwood
Awards : *Paul Robeson Scholar*

GRANTS AND FELLOWSHIPS

Extreme Science and Engineering Discovery Environment (XSEDE) Startup — 2022 - 2023
PI; *Accelerated SED Modeling of Millions of Galaxies* — 2,500 GPU Hours

Dean's Dissertation Fellowship, New York University — 2016

James Arthur Graduate Fellowship, New York University — 2015

Henry M. MacCracken Fellowship, New York University — 2011 - 2015

Dean's Travel Grant, New York University — 2015, 2016

LEADERSHIP AND COLLABORATIONS

PFS, Subaru Prime Focus Spectrograph

co-leader, PFS Cosmology Survey — 2022 -
member, PFS Galaxy Evolution Survey — 2021 -

DESI, Dark Energy Spectroscopic Instrument

Builder, awarded for 3000+ hours of service — 2022 -
co-chair, Bright Galaxy Survey Working Group — 2019 - 2022
member, Science Committee — 2019 - 2022
member, External Collaborator Committee — 2023 -
topical group lead, Galaxy Quasar Physics Working Group — 2022 -

SimBIG Collaboration, Simulation-Based Inference of Galaxies

Spokesperson — 2021 -

Rubin Observatory Legacy Survey of Space and Time

member, Dark Energy Science Collaboration — 2023 -

SDSS, Sloan Digital Sky Survey-III, IV

PRIMUS, PRIsm MUlti-object Survey

Scientific collaborations: CAMELS, Quijote, IQ, Learning the Universe

PROFESSIONAL SERVICE

Organizer	Simulation Based Inference for Galaxy Evolution	2024
Lead Organizer	Winter 2020 Berkeley Cosmology Conference, UC Berkeley, CA	2020
Organizer	Bay Area Likelihood-Free Inference Meeting, Berkeley	2019
Organizer	Likelihood-Free Inference workshop, Flatiron Institute, NYC	2019
Organizer	Berkeley Lab Institute for Nuclear and Particle Astrophysics Seminar	2019 - 2020
Organizer	LBNL/BCCP DESI lunch seminar	2018 - 2020
Organizer	NYU CCPP Astro Coffee	2014 - 2017
Member	American Physical Society	
Member	Statistics Without Borders	
Referee	ApJ, MNRAS, JCAP, A&A, PRD, PRL, JOSS, ICML, NeurIPS	
Reviewer	STFC DiRAC Resource Allocation Committee	2023
	NASA Nancy Grace Roman Space Telescope Research Panel	2023
	FINESST grant	2019 - 2020
	AAS Chambliss Award	2017
Attendee	UCSF Scientific Leadership and Management Skills Course	2019

RESEARCH ADVISING

Graduate Research

James Kyubin Kwon	UC Santa Barbara	*4 papers*	2019 -
Yan Liang	Princeton	*2 papers; 1 peer-reviewed conference paper*	2022 -
Jiaxuan Li	Princeton	*1 paper; 1 peer-reviewed conference paper*	2021 -
Christian Jespersen	Princeton		2021 -
Massimo Pascale	UC Berkeley		2019 - 2021

Undergraduate Research

Yuka Yamada	Univ. of Tokyo		2022 -
Liam Parker	Princeton	*1 paper; 1 peer-reviewed conference paper*	2022 -
Arin Avsar	UC Berkeley		2019 - 2021
Tess Werhane	UC Berkeley		2019 - 2020
James Zhu	UC Berkeley		2019 - 2020
Patrick Staudt	Rutgers		2019 - 2020

TEACHING

Co-Instructor, Princeton University 2021

Fall 2021 Graduate Seminar in Theoretical Astrophysics (AST541) on Simulation-Based Inference

Instructor, Kavli Institute for Theoretical Physics (KITP) 2023

Tutorial on Simulation-Based Inference for the KITP "Building a Physical Understanding of Galaxy Evolution with Data-driven Astronomy" program.

Instructor, DESI Early Career Scientist Workshop 2020

Virtual workshop on spectral energy distribution (SED) analysis of galaxy spectra

DIVERSITY, EQUITY, AND INCLUSION

Princeton Astrophysics Climate Committee for Equity and Inclusion 2022 -

Postdoc representative on the departmental committee tasked with assessing department climate and identifying and recommending ways to improve equity and inclusion.

Princeton Astrophysics Affinity Group Committee 2022 -
Coordinating affinity groups for members of historically under-represented groups including Black Latinx, Indigenous, Asian, Pacific Islander, women and gender minorities, and LGBTQ+.

Princeton Astrophysics Climate Committee Iconography Working Group 2022 -
Updating iconography in Peyton Hall to improve climate and reflect the diversity in the department.

Princeton Astrophysics Climate Committee TEAM-UP Working Group 2022 -
Implementing the TEAM-UP report to increase the number of African-Americans in astrophysics.

Princeton Astrophysics Equity and Inclusion Committee on Recruitment 2020 - 2021
Developed actionable plans for recruiting a more diverse body of students, postdocs, and faculty.

Berkeley Lab In School Settings (BLISS) 2017 - 2019
Instructed science courses in K-8 classrooms in underserved neighborhoods in Richmond, California

OUTREACH

Member, DESI Education and Public Outreach Committee 2020 - 2021
Volunteer, QuarkNet Physics In and Through Cosmology Workshop 2020
Volunteer, UC Berkeley Astro Night 2018 - 2019
Volunteer, Berkeley Lab Exploration of New Discoveries (BLEND): Big Data 2018
Volunteer, Intrepid Museum Kids Week Meet the Scientist 2017
Volunteer, NY Hall of Science Big Data Fest 2015
Appeared in an episode of the NYTimes podcast *Tell Me Something I Don't Know* 2016

PUBLICATIONS

total: 71 — first author: 21 — total citations 3569, h-index 24, i10-index 39 [ADS] [Google Scholar]

PRIMARY AUTHOR

36. Nemer, A.; **Hahn, C.**; Li, J.; Melchior, P.; Goodman, J. *Constraining Protoplanetary Disk Winds from Forbidden Line Profiles with Simulation-based Inference* ApJ accepted *2024*
35. Hou, J.; Moradinezhad Dizgah, A.; **Hahn, C.**; *et al.* SimBIG*: Cosmological Constraints from the Redshift-Space Galaxy Skew Spectra* PRD submitted *2024* (arXiv:2401.15074).
34. Kwon, K. J.; **Hahn, C.** Modeling the Kinematics of Central and Satellite Galaxies Using Normalizing Flows ApJ submitted *2024* (arXiv:2401.12318).
33. **Hahn, C.**; Lemos, P.; Parker, L.; *et al.* SimBIG*: The First Cosmological Constraints from Non-Gaussian and Non-Linear Galaxy Clustering* Nature Astronomy submitted *2023* (arXiv:2310.15246).
32. **Hahn, C.**; Eickenberg, M.; Ho, S.; *et al.* SimBIG*: The First Cosmological Constraints from the Non-Linear Galaxy Bispectrum* PRD accepted *2023* (arXiv:2310.15243).
31. Régaldo-Saint Blancard; **Hahn, C.**; Ho, S.; *et al.* SimBIG*: Galaxy Clustering Analysis with the Wavelet Scattering Transform* PRD accepted *2023* (arXiv:2310.15250).
30. Lemos, P.; Parker, L.; **Hahn, C.**; *et al.* SimBIG*: Field-level Simulation-Based Inference of Galaxy Clustering* PRD accepted *2023* (arXiv:2310.15256).
29. Cano, L.; **Hahn, C.** *Exposing Disparities in Flood Adaptation for Equitable Future Interventions* Nature Communications submitted *2023* (arXiv:2312.03843).
28. **Hahn, C.**; Villaescusa-Navarro, F.; Melchior, P.; Teyssier, R. *Cosmology with Galaxy Photometry Alone* ApJL submitted *2023* (arXiv:2310.08634).

27. **Hahn, C.**; Bottrell, C.; Lee, K.G. HaloFlow *I: Neural Inference of Halo Mass from Galaxy Photometry and Morphology* ApJ submitted *2023* (arXiv:2310.04503).
26. **Hahn, C.**; Aguilar, J. N.; Alam, S.; *et al. PROVABGS: The Probabilistic Stellar Mass Function of the BGS One-Percent Survey* ApJ 963, 56, *2024* (arXiv:2306.06318).
25. DESI Collaboration (incl. **Hahn, C.**) *Validation of the Scientific Program for the Dark Energy Spectroscopic Instrument* AJ, 167, 62 *2024* (arXiv:2306.06307).
    Led the DESI Bright Galaxy Survey as co-chair.
24. DESI Collaboration (incl. **Hahn, C.**) *The Early Data Release of the Dark Energy Spectroscopic Instrument* AJ submitted *2023* (arXiv:2306.06308).
    Led the DESI Bright Galaxy Survey as co-chair.
23. **Hahn, C.**; Eickenberg, M.; Ho, S.; Hou, J.; *et al.* SimBIG*: A Forward Modeling Approach To Analyzing Galaxy Clustering* PNAS, 120, 42 *2023* (arXiv:2211.00723).
22. **Hahn, C.**; Eickenberg, M.; Ho, S.; Hou, J.; *et al.* SimBIG*: Mock Challenge for a Forward Modeling Approach to Galaxy Clustering* JCAP, 04, 010 *2023* (arXiv:2211.00660).
21. **Hahn, C.**; Wilson, M. J.; Ruiz-Macias, O.; Cole, S.; Weinberg, D. H.; *et al. The DESI Bright Galaxy Survey: Final Target Selection, Design, and Validation* AJ, 165, 253, *2023* (arXiv:2208.08512).
20. Horowitz, B.; **Hahn, C.**; Lanusse, F.; Modi, C.; Ferraro, S. *Differentiable Stochastic Halo Occupation Distribution* MNRAS accepted *2022* (arXiv:2211.03852).
19. Kwon, K. J.; **Hahn, C.**; Alsing, J. *Neural Stellar Population Synthesis Emulator for the DESI PROVABGS* ApJS 265, 23 *2022* (arXiv:2209.14323).
18. **Hahn, C.**; Kwon, K. J.; Tojeiro, R.; Siudek, M.; Canning, R. E. *et al.The DESI PRObabilistic Value-Added Bright Galaxy Survey (PROVABGS) Mock Challenge* ApJ, 945, 16 *2023* (arXiv:2202.01809).
17. **Hahn, C.**; Melchior, P. *Accelerated Bayesian SED Modeling using Amortized Neural Posterior Estimation* ApJ, 938, 1 *2022* (arXiv:2203.07391).
15. **Hahn, C.**; Starkenburg, T. K.; Anglés-Alcázar D.; Choi, E.; Davé, R. *et al. IQ Collaboratory III: The Empirical Dust Attenuation Framework – Taking Hydrodynamical Simulations with a Grain of Dust* ApJ, 926, 122, *2022* (arXiv:2106.09741).
14. **Hahn, C.**, Villaescusa-Navarro, F.; *Constraining M_ν with the Bispectrum II: The Total Information Content of the Galaxy Bispectrum* JCAP, 04, 029, *2021* (arXiv:2012.02200).
13. **Hahn, C.**; Villaescusa-Navarro, F.; Castorina, E.; Scoccimarro R. *Constraining M_ν with the Bispectrum I: Breaking Parameter Degeneracies* JCAP, 03, 040, *2020* (arXiv:1909.11107).
12. Villaescusa-Navarro, F.; **Hahn, C.**; Massara, E.; Banerjee, A.; Delgado, A. *et al.The Quijote Simulation* ApJS, 250, 2, *2020* (arXiv:1909.05273).
    IOP Publishing 2023 Top Cited Paper Award
11. **Hahn, C.**; Tinker, J.; Wetzel, A. *Constraining Star Formation Histories of Blue Galaxies using the Scatter between Stellar Mass and Halo Mass* (arXiv:1910.01644).
10. **Hahn, C.**; Beutler, F.; Sinha, M.; Berlind, A.; Ho, S.; Hogg, D. W. *Likelihood Non-Gaussianity in Large-Scale Structure Analyses* MNRAS, 485, 2956, *2019* (arXiv:1803.06348).
9. **Hahn, C.**; Starkenburg, T.; Choi, E.; Davé, R.; Dickey, C.; Geha, M. *et al. IQ-Collaboratory 1.1: the Star-Forming Sequence of Simulated Central Galaxies* ApJ, 872, 160 *2019* (arXiv:1809.01665).
8. Vakili, M.; **Hahn, C.** *How are galaxies assigned to halos? Searching for assembly bias in the SDSS galaxy clustering* ApJ, 872, 115, *2019* (arXiv:1610.01991).
7. Tinker, J.; **Hahn, C.**; Mao, Y.; Wetzel, A. *Halo Histories versus Galaxy Properties at z=0, III: The Properties of Star-Forming Galaxies* MNRAS, 478, 4487, *2018* (arXiv:1705.08458).

6. Tinker, J.; **Hahn, C.**; Mao, Y.; Wetzel, A.; Conroy, C. *Halo Histories versus Galaxy Properties at z=0, II: Large-Scale Galactic Conformity* MNRAS, 477, 935, *2018* (arXiv:1702.01121).
5. **Hahn, C.**; Tinker, J.; Wetzel, A. *Star Formation Quenching Timescale of Central Galaxies in a Hierarchical Universe* ApJ, 841, 6, *2017* (arXiv:1609.04398).
4. **Hahn, C.**; Vakili M.; Walsh, K.; Hearin, A.; Hogg, D. W.; Campbell, D. *Approximate Bayesian Computation in Large Scale Structure: Constraining the Galaxy-Halo Connection* MNRAS, 469, 2791, *2017* (arXiv:1607.01782).
3. **Hahn, C.**; Scoccimarro, R.; Blanton, M.; Tinker, J.; Rodríguez-Torres, S. *The Effect of Fiber Collisions on the Galaxy Power Spectrum Multipole* MNRAS, 467, 1940, *2017* (arXiv:1609.01714).
2. **Hahn, C.**; Blanton, M.; Moustakas, J.; Coil, A.; Cool, R.; Eisenstein, D. *et al.* *PRIMUS: Effects of Galaxy Environment on the Quiescent Fraction at $z < 0.8$* ApJ, 806, 162, *2015* (arXiv:1412.7162).
1. **Hahn, C.**; Sellwood, J.; Pryor C. *Velocity-space substructure from nearby RAVE and SDSS stars* MNRAS, 418, 2459, *2011* (arXiv:1102.4626).

CONTRIBUTING AUTHOR

35. Wang, Y. *et al.* (incl. **Hahn, C.**) *Measuring the conditional luminosity and stellar mass functions of galaxies by combining the DESI LS DR9, SV3 and Y1 data* MNRAS submitted *2023* (arXiv:2312.17459).
34. Smith, A. *et al.* (incl. **Hahn, C.**) *Generating mock galaxy catalogues for flux-limited samples like the DESI Bright Galaxy Survey* MNRAS submitted *2023* (arXiv:2312.08792).
33. Pandya, V. *et al.* (incl. **Hahn, C.**) *Galaxies Going Bananas: Inferring the 3D Geometry of High-Redshift Galaxies with JWST-CEERS* ApJ submitted *2023* (arXiv:2310.15232).
32. Li, J.; Melchior, P.; **Hahn, C.**; Huang, S. *PopSED: Population-Level Inference for Galaxy Properties from Broadband Photometry with Neural Density Estimation* AJ submitted *2023* (arXiv:2309.16958).
31. Modi, C.; Pandey, S.; Ho, M.; **Hahn, C.** *et al.* *Sensitivity Analysis of Simulation-Based Inference for Galaxy Clustering* MNRAS submitted *2023* (arXiv:2309.15071).
30. Chawak, C.; Villaescusa-Navarro, F.; *et al.* (incl. **Hahn, C.**) *Cosmology with multiple galaxies* submitted *2023* (arXiv:2309.12048).
29. Liang, Y.; Melchior, P.; **Hahn, C.** *et al.* *Outlier Detection in the DESI Bright Galaxy Survey* ApJL, 956, 6 *2023* (arXiv:2307.07664).
28. Thiele, L.; Massara, E.; Pisani, A.; **Hahn, C.** *et al.* *Neutrino mass constraint from an Implicit Likelihood Analysis of BOSS voids* ApJ submitted *2023* (arXiv:2307.07555).
27. Lovell, C. C.; *et al.* (incl. **Hahn, C.**) *A Hierarchy of Normalizing Flows for Modelling the Galaxy-Halo Relationship* submitted *2023* (arXiv:2307.06967).
26. Schlafly, E.; *et al.* (incl. **Hahn, C.**) *Survey Operations for the Dark Energy Spectroscopic Instrument* submitted *2023* (arXiv:2306.06309).
25. Prada, F.; *et al.* (incl. **Hahn, C.**) *The DESI One-Percent Survey: Modelling the clustering and halo occupation of all four DESI tracers with Uchuu* submitted *2023* (arXiv:2306.06315).
24. Rocher, A.; *et al.* (incl. **Hahn, C.**) *The DESI One-Percent survey: exploring the Halo Occupation Distribution of Emission Line Galaxies with AbacusSummit simulations* JCAP, 10, 016 *2023* (arXiv:2306.06319).
23. Rashkovetskyi, M.; *et al.* (incl. **Hahn, C.**) *Validation of semi-analytical, semi-empirical covariance matrices for two-point correlation function for Early DESI data* MNRAS, 524, 3894 *2023* (arXiv:2306.06320).

22. Echeverri, P.; *et al.* (incl. **Hahn, C.**) *Cosmology with one galaxy? – The ASTRID model and robustness* ApJ, 954, 125 *2023* (arXiv:2304.06084).
21. Melchior, P.; Yan, L.; **Hahn, C.**; Goulding, A. *Autoencoding Galaxy Spectra I: Architecture* AJ, 166, 74 *2023* (arXiv:2211.07890).
20. Giusarma, E.; *et al.* (incl. **Hahn, C.**) *Learning neutrino effects in Cosmology with Convolutional Neural Networks*, ApJ, 950, 70, *2023* (arXiv:1910.04255).
19. Lemos, P.; Cranmer, M.; Abidi, M.; **Hahn, C.**; *et al.* *Robust Simulation-Based Inference in Cosmology with Bayesian Neural Networks* Machine Learning: Science and Technology, 4, 01 *2023* (arXiv:2207.08435)
18. Darragh-Ford, E; *et al.* (incl. **Hahn, C.**) *Target Selection and Sample Characterization for the DESI LOW-Z Secondary Target Program* ApJ 954, 149 *2023* (arXiv:2212.07433).
17. Myers, A. D.; *et al.* (incl. **Hahn, C.**) *The Target Selection Pipeline for the Dark Energy Spectroscopic Instrument* AJ, 165, 50 *2023* (arXiv:2208.08518).
16. Villaescusa-Navarro, F.; *et al.* (incl. **Hahn, C.**) *The CAMELS project: public data release* ApJS, 265, 54 *2023* (arXiv:2201.01300).
15. Hou, J.; Moradinezhad Dizgah, A.; **Hahn, C.**; Massara, E. *Cosmological Information in Skew Spectra of Biased Tracers in Redshift Space* JCAP, 03, 045 *2023* (arXiv:2210.12743).
14. Lan, T.; *et al.* (incl. **Hahn, C.**) *The DESI Survey Validation: Results from Visual Inspection of Bright Galaxies, Luminous Red Galaxies, and Emission Line Galaxies* ApJ, 943, 68 *2023* (arXiv:2208.08516).
13. Massara, E.; Villaescusa-Navarro, F.; **Hahn, C.**; Abidi, M. M.;*et al.*Cosmological Information in the Marked Power Spectrum of the Galaxy Field ApJ, 951, 70 *2023* (arXiv:2206.01709).
12. Abareshi, J.; *et al.* (incl. **Hahn, C.**) *Overview of the Instrumentation for the Dark Energy Spectroscopic Instrument* AJ, 164, 207 *2022* (arXiv:2205.10939).
11. Eickenberg, M.; *et al.* (incl. **Hahn, C.**) *Wavelet Moments for Cosmological Parameter Estimation* ApJ submitted *2022* (arXiv:2204.07646).
10. Wang, Y.; *et al.* (incl. **Hahn, C.**) *Extracting high-order cosmological information in galaxy surveys with power spectra* Nat. Astron submitted *2022* (arXiv:2202.05248).
9. Friedrich, O.; Halder, A.; Boyle, A.; Uhlemann, C.; Britt, D; Codis, S; Gruen, D; **Hahn, C.** *The PDF perspective on the tracer-matter connection: Lagrangian bias and non-Poissonian shot noise* MNRAS, 510, 5069, *2022* (arXiv:2107.02300).
8. Dickey, C. M.; Starkenburg, T. K.; Geha, M.; **Hahn, C**; *et al.* *IQ Collaboratory II: The Quiescent Fraction of Isolated, Low Mass Galaxies Across Simulations and Observations* ApJ, 915, 53, *2021* (arXiv:2010.01132).
7. Ruiz-Macias, O. *et al.* (incl. **Hahn, C.**); *Characterising the target selection pipeline for the Dark Energy Spectroscopic Instrument Bright Galaxy Survey* MNRAS, 502, 4328, *2021* (arXiv:2007.14950).
6. Alsing, J.; Peiris, H.; Leja, J.; **Hahn, C.**; *et al.* SPECULATOR: Emulating Stellar Population Synthesis for Fast and Accurate Galaxy Spectra and Photometry ApJS, 249, 5, *2020* (arXiv:1911.1178).
5. Blanton, M. *et al.* (incl. **Hahn, C.**) *Sloan Digital Sky Survey IV: Mapping the Milky Way, Nearby Galaxies, and the Distant Universe* AJ, 154, 28, *2017* (arXiv:1703.00052).
4. Vakili, M. *et al.* (incl. **Hahn, C.**) *Accurate halo-galaxy mocks from automatic bias estimation and particle mesh gravity solvers* MNRAS, 472, 4144, *2017* (arXiv:1701.03765).

3. Rodríguez-Torres, S. *et al.* (incl. **Hahn, C.**) *Clustering of Quasars in the First Year of the SDSS-IV eBOSS survey: Interpretation and halo occupation distribution* MNRAS, 468, 728, *2017* (arXiv:1612.06918).
2. Zhai, Z.; Tinker, J.; **Hahn, C.** *et al.* *The Clustering of Luminous Red Galaxies at $z \sim 0.7$ from eBOSS and BOSS Data* ApJ, 848, 2, *2017* (arXiv:1607.05383).
1. Rodríguez-Torres, S. *et al.* (incl. **Hahn, C.**) *The clustering of galaxies in the SDSS-III Baryon Oscillation Spectroscopic Survey: modelling the clustering and halo occupation distribution of BOSS CMASS galaxies in the Final Data Release* MNRAS, 460, 1173, *2016* (arXiv:1509.06404).

PEER-REVIEWED MACHINE LEARNING CONFERENCE PAPERS

10. Pandey S. *et al.* (incl. **Hahn, C.**) *Sensitivity Analysis of Simulation-Based Inference for Galaxy Clustering* NeurIPS AI4Science *2023*
9. **Hahn, C.**; Melchior, P.; Villaescusa-Navarro, F.; Teyssier, R. *Cosmology with Galaxy Photometry Alone* ICML Machine Learning for Astrophysics Workshop *2023*
8. **Hahn, C.**; Lemos, P.; ; Regaldo, B.; Parker, L. H. *et al.* SimBIG*: Galaxy Clustering Beyond the Power Spectrum* ICML Machine Learning for Astrophysics Workshop *2023*
7. Lemos, P.; Parker, L. H.; **Hahn, C.**; Regaldo, B. *et al.* SimBIG*: Field-level simulation-based inference of large-scale structure* ICML Machine Learning for Astrophysics Workshop *2023*
6. Li, J.; Melchior, P.; **Hahn, C.**; Huang, S. *Population-Level Inference for Galaxy Properties from Broadband Photometry* ICML Machine Learning for Astrophysics Workshop *2023*
5. Lovell, C. *et al.* (incl. **Hahn, C.**) *A Hierarchy of Normalizing Flows for Modelling the Galaxy-Halo Relationship* ICML Machine Learning for Astrophysics Workshop *2023*
4. **Hahn, C.**; Abidi, M.; Eickenberg, M.; Ho, S.; Lemos, P. *et al.* *SIMBIG: Likelihood-Free Inference of Galaxy Clustering* ICML Machine Learning for Astrophysics Workshop *2022*
3. **Hahn, C.**; Melchior, P. *Accelerated Galaxy SED Modeling using Amortized Neural Posterior Estimation* ICML Machine Learning for Astrophysics Workshop *2022*
2. Lemos, P.; Cranmer, M.; Abidi, M.; **Hahn, C.**; *et al.* *Robust Simulation-Based Inference with Bayesian Neural Networks* ICML Machine Learning for Astrophysics Workshop *2022*
1. Melchior, P.; **Hahn, C.**; Liang, Y. *Autoencoding Galaxy Spectra* ICML Machine Learning for Astrophysics Workshop *2022*

WHITE PAPERS AND OTHERS

3. Greene, J.; *et al.* (incl. **Hahn, C.**) *The Prime Focus Spectrograph Galaxy Evolution Survey 2022* (arXiv:2206.14908).
2. Tollerud, E. *et al.* (incl. **Hahn, C.**) *Sustaining Community-Driven Software for Astronomy in the 2020s 2019*
1. Ferraro, S. *et al.* (incl. **Hahn, C.**) *Inflation and Dark Energy from spectroscopy at $z > 2$ 2019* (arXiv:1903.09208).

SELECTED TALKS

(*: invited)

*Cosmology Seminar, Boston University	Mar. 2024
*Steward Observatory/NSF's NOIRLab Joint Colloquium, University of Arizona	Feb. 2024
*Astrophysics Seminar, University of Pittsburgh	Feb. 2024
*Astrophysics Seminar, University of Texas Austin	Feb. 2024
*Astrophysics Seminar, University of Connecticut	Feb. 2024

*Astrophysics Seminar, University of Pennsylvania	Jan. 2024
Potential of ML in Astronomical Surveys, Simons Foundation NYC	Dec. 2023
*Cosmology Seminar, Institute of Theoretical Astrophysics University of Oslo	Nov. 2023
*Astrophysics Seminar, Università degli Studi di Milano Statale	Nov. 2023
*New Physics from Galaxy Clustering II, ICTP Trieste	Nov. 2023
*Nuclear and Particle Theory Seminar, MIT Center for Theoretical Physics	Oct. 2023
*Gravity Group Seminar, Princeton Department of Physics	Oct. 2023
*Galaxies and Cosmology Seminar, UT Austin	Oct. 2023
*Physics Colloquium, University of Arizona	Oct. 2023
*Astro Seminar, Tufts University	Sep. 2023
*Seminar, NYC Office of the Mayor	Sep. 2023
*Bahcall Lunch, Institute for Advanced Studies, Princeton	Sep. 2023
*Seminar, Kavli IPMU, Tokyo	Sep. 2023
*DESI Collaboration Meeting, Durham UK	Jul. 2023
Cosmic Connections: ML×Astrophysics Symposium, Simons Foundation NYC	May 2023
*We MUST Talk Seminar, Remote	Apr 2023
*Tristate Cosmology Meeting, Flatiron Institute NYC	Mar 2023
HSC PFS Rubin Meeting, Princeton University NJ	Mar 2023
*Colloquium, Boston University MA	Feb 2023
*Kavli Institute for Theoretical Physics Workshop, Flatiron Institute NYC	Feb 2023
*Astrophysics Symposium, Yale University CT	Jan 2023
*241st American Astronomical Society Meeting, Seattle	Jan 2023
*DESI Collaboration Meeting, Mexico	Dec 2022
*DESI Research Forum, Remote	Nov 2022
**Euclid* Machine Learning Seminar, Remote	Oct 2022
Learning the Universe, Flatiron Institute NYC	Sep 2022
*Thursday Lunch Seminar, Flatiron Institute NYC	May 2022
*LSST DESC Seminar	May 2022
*DESI Research Forum	May 2022
*Institute for Advance Studies, Princeton	Apr. 2022
*NYU Astro Seminar, NYC	Apr. 2022
APS 2022 meeting, NYC	Apr. 2022
Large-Volume Spec Workshop, STScI, Remote	Mar. 2022
Learn the Universe, Flatiron Institute NYC	Mar. 2022
*DESI AI Seminar, Remote	Dec. 2021
Tristate Cosmology Meeting, Flatiron Institute NYC	Nov. 2021
Thunch, Princeton University	Nov. 2021
SpergelFest, Princeton University/Flatiron Institute NYC	Oct. 2021
Learning the Universe, Flatiron Institute NYC	Aug. 2021
COSMO21, University of Illinois, Remote	Aug. 2021
Multi-Object Spectroscopy for Galaxy Evolution, STScI, Remote	May 2021
ESO GALSPEC2021, Remote	Apr. 2021
Galread Seminar, Princeton Unviersity	Mar. 2021
*Astro/Cosmology Seminar, Kavli IPMU	Feb. 2021
*Cosmology-Galaxy-IGM Seminar, UC Santa Cruz	Jan. 2021
*Astro Seminar, University of Waterloo	Oct. 2020
Bahcall Lunch, Institute for Advanced Studies	Sep. 2020
Cosmology at Home, Remote	Aug. 2020
Aspen Galaxy Quenching, Aspen CO	Jan. 2020

*Cosmology Lunch Seminar, Princeton/Institute for Advanced Study	Dec. 2019
Hernquist group meeting, Harvard Center for Astrophysics	Nov. 2019
Galaxy Lunch, Yale University	Nov. 2019
Morning Tea, Carnegie Observatories	Oct. 2019
*Cosmology Seminar, KIPAC/SLAC/Stanford	Oct. 2019
KICP Chicago	Oct. 2019
CPAC seminar, Argonne National Lab	Oct. 2019
Cosmic Controversies, KICP Chicago	Oct. 2019
*DESI Commissioning and Survey Validation workshop, NOAO AZ	Sep. 2019
DESI Collaboration meeting, Berkeley Lab	Jul. 2019
Cosmology × Data, NYU CCPP	May 2019
*Isolated and Quenched Galaxies Workshop, Flatiron Institute NYC	Dec. 2018
DESI Collaboration Meeting, Tuscon AZ	May 2018
Flatiron Institute NYC	Feb. 2018
Isolated and Quenched Galaxies Workshop, Flatiron Institute NYC	Sep. 2017
*CCAPP seminar, The Ohio State University	Feb. 2017
*seminar, Argonne National Lab	Jan. 2017
American Astronomical Society 229, Grapevine TX	Jan. 2017
*RPM seminar, Berkeley Lab	Dec. 2016
Yale University	Oct. 2016
Seminar, Universidad Nacional de Colombia, Bogota COL	Jun. 2016
Brownbag Lunch, NYU CCPP	Apr. 2016
Multi-Object Spectroscopy in the Next Decade, Canary Islands ESP	Feb. 2015
Evolving Galaxies in Evolving Environments, Bologna ITA	Sep. 2014

PUBLIC SOFTWARE AND DATA

`SEDflow`	*python* package for accelerated Bayesian SED modeling of galaxy photometry using simulation-based inference with neural density estimators
`provabgs`	*python* package for joint SED modeling of galaxy photometry and spectroscopy using neural emulators
Molino	75,000 mock galaxy catalogs, constructed from full N-body simulations, designed to quantify the total cosmological information content of 3D galaxy distributions
`pySpectrum`	*python* package for measuring galaxy powerspectrum and bispectrum using Fast Fourier Transforms
`starFS`	*python* package for identifying the star-forming sequence in galaxy populations using Gaussian Mixutre Models

REFERENCES

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