

Publication List Leander Thiele

March 20, 2025

- E. Calabrese, J.C. Hill, H.T. Jense, A. LaPosta, et al (incl. **L. Thiele**), *The Atacama Cosmology Telescope: DR6 Constraints on Extended Cosmological Models*, 2025, [arXiv:2503.14454](#) [astro-ph.CO]
- L. Thiele**, *De-baryonifying halos via optimal transport*, 2024, [arXiv:2411.18399](#) [astro-ph.CO]
- J. Armijo, G.A. Marques, C.P. Novaes, **L. Thiele**, J.A. Cowell, D. Grandón, M. Shirasaki, J. Liu, *Cosmological constraints using Minkowski functionals from the first year data of the Hyper Suprime-Cam*, 2024, [arXiv:2410.00401](#) [astro-ph.CO]
- C.P. Novaes, **L. Thiele**, J. Armijo, S. Cheng, J.A. Cowell, G.A. Marques, E.G.M. Ferreira, M. Shirasaki, K. Osato, J. Liu, *Cosmology from HSC Y1 Weak Lensing with Combined Higher-Order Statistics and Simulation-based Inference*, 2024, [arXiv:2409.01301](#) [astro-ph.CO]
- A. Kogut, E. Switzer, D. Fixsen, N. Aghanim, J. Chluba, D. Chuss, J. Delabrouille, C. Dvorkin, B. Hensley, J.C. Hill, B. Maffei, A. Pullen, A. Rotti, A. Sabyr, **L. Thiele**, E. Wollack, I. Zelko, *The Primordial Inflation Explorer (PIXIE): Mission Design and Science Goals*, 2024, [arXiv:2405.20403](#) [astro-ph.CO]
- S. Cheng, G.A. Marques, D. Grandón, **L. Thiele**, M. Shirasaki, B. Ménard, J. Liu, *Cosmological constraints from weak lensing scattering transform using HSC Y1 data*, 2024, [arXiv:2404.16085](#) [astro-ph.CO]
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- L. Thiele**, G.A. Marques, J. Liu, M. Shirasaki, *Cosmological constraints from HSC Y1 lensing convergence PDF*, 2023, PRD 108, 123526, [arXiv:2304.05928](#) [astro-ph.CO]
- A.M. Delgado, D. Anglés-Alcázar, **L. Thiele**, M. Ntampaka, S. Pandey, K. Lehman, R.S. Somerville, S. Genel, F. Villaescusa-Navarro, *Predicting the impact of feedback on matter clustering with machine learning in CAMELS*, 2023, MNRAS 526, 4, [arXiv:2301.02231](#) [astro-ph.GA]
- D. Wadekar, **L. Thiele**, J.C. Hill, S. Pandey, F. Villaescusa-Navarro, D.N. Spergel, M. Cranmer, D. Nagai, D. Anglés-Alcázar, S. Ho, L. Hernquist, *The SZ flux-mass (Y-M) relation at low halo masses: improvements with symbolic regression and strong constraints on baryonic feedback*, 2022, MNRAS 522, 2, [arXiv:2209.02075](#) [astro-ph.CO]
- B.K.K. Lee, W. Coulton, **L. Thiele**, S. Ho, *An exploration of the properties of cluster profiles for the thermal and kinetic Sunyaev-Zel'dovich effects*, 2022, MNRAS 517, 420, [arXiv:2205.01710](#) [astro-ph.CO]

- L. Thiele**, M. Cranmer, W. Coulton, S. Ho, D.N. Spergel, *Predicting the Thermal Sunyaev-Zel'dovich Field using Modular and Equivariant Set-Based Neural Networks*, 2022, MLST 3, 035002, [arXiv:2203.00026 \[astro-ph.CO\]](#), poster presented at the Fourth Workshop on Machine Learning and the Physical Sciences (NeurIPS 2021)
- L. Thiele**, D. Wadekar, J.C. Hill, N. Battaglia, J. Chluba, F. Villaescusa-Navarro, L. Hernquist, M. Vogelsberger, D. Anglés-Alcázar, F. Marinacci, *Percent-level constraints on baryonic feedback with spectral distortion measurements*, 2022, PRD 105, 083505, [arXiv:2201.01663 \[astro-ph.CO\]](#)
- D. Wadekar, **L. Thiele**, F. Villaescusa-Navarro, J.C. Hill, D.N. Spergel, M. Cranmer, N. Battaglia, D. Anglés-Alcázar, L. Hernquist, S. Ho, *Augmenting astrophysical scaling relations with machine learning: application to reducing the SZ flux-mass scatter*, 2022, PNAS 120(12), [arXiv:2201.01305 \[astro-ph.CO\]](#)
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- F. Villaescusa-Navarro, S. Genel, D. Anglés-Alcázar, **L. Thiele**, R. Dave, D. Narayanan, A. Nicola, Y. Li, P. Villanueva-Domingo, B. Wandelt, D.N. Spergel, R.S. Somerville, J.M. Zorrilla Matilla, F.G. Mohammad, S. Hassan, H. Shao, D. Wadekar, M. Eickenberg, K.W.K. Wong, G. Contardo, Y. Jo, E. Moser, E.T. Lau, L.F.M.P. Valle, L.A. Perez, D. Nagai, N. Battaglia, M. Vogelsberger, *The CAMELS Multifield Dataset: Learning the Universe's Fundamental Parameters with Artificial Intelligence*, 2021, ApJS 259, 61, [arXiv:2109.10915 \[cs.LG\]](#)
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- F. Villaescusa-Navarro, D. Anglés-Alcázar, S. Genel, D.N. Spergel, Y. Li, B. Wandelt, A. Nicola, **L. Thiele**, S. Hassan, J.M. Zorrilla Matilla, D. Narayanan, R. Dave, M. Vogelsberger, *Multifield Cosmology with Artificial Intelligence*, 2021, [arXiv:2109.09747 \[astro-ph.CO\]](#)
- L. Thiele**, Y. Guan, J.C. Hill, A. Kosowsky, D.N. Spergel, *Can small-scale baryon inhomogeneities resolve the Hubble tension? An investigation with ACT*

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- L. Thiele**, J.C. Hill, K.M. Smith, *Accurate analytic model for the thermal Sunyaev-Zel'dovich one-point probability distribution function*, 2019, PRD 99, 103511, [arXiv:1812.05584](#) [[astro-ph.CO](#)]
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