Peer-reviewed Publications

1. **A.I. Malz**, F. Lanusse, J.F. Crenshaw, M.L. Graham. 2021. *submitted to MNRAS.* An information-based metric for observing strategy optimization, demonstrated in the context of photometric redshifts with applications to cosmology (`arXiv:2104.08229`)

   Lead author: conceptualization, data curation, formal analysis, funding acquisition, investigation, methodology, software, validation, visualization, writing

2. R. Hložek, K.A. Ponder, **A.I. Malz**, M. Dai, G. Narayan, E.E.O. Ishida,T. Allam Jr., A. Bahmanyar, R. Biswas, L. Galbany, S.W. Jha, D.O. Jones, R. Kessler, M. Lochner, A.A. Mahabal, K.S. Mandel, J.R. Martinez-Galarza, J.D. McEwen, D. Muthukrishna, H.V. Peiris, C.M. Peters, C.N. Setzer. 2020. *submitted to ApJS 22 December 2020.* Results of the Photometric LSST Astronomical Time-series Classification Challenge (PLAsTiCC) (`arXiv:2012.12392`)

   Lead author: onceptualization, formal analysis, investigation, methodology, visualization, writing

3. **A.I. Malz**, D.W. Hogg. 2021. *accepted to ApJ 23 July 2021.* How to obtain the redshift distribution from probabilistic redshift estimates (`arXiv:2007.12178`)

   Lead author: conceptualization, data curation, formal analysis, funding acquisition, investigation, methodology, software, validation, visualization, writing

4. M. Aguena, C. Avestruz, C. Combet, S. Fu, R. Herbonnet, **A. I. Malz**, M. Penna-Lima, M. Ricci, S. D. P. Vitenti, L. Baumont, H. Fan, M. Fong, M. Ho, M. Kirby, C. Payerne, D. Boutigny, B. Lee, B. Liu, T. McClintock, H. Miyatake, C. Sifón, A. von der Linden, H. Wu, M. Yoon. 2021. MNRAS 508 4 6092. "CLMM: a LSST-DESC Cluster weak Lensing Mass Modeling library for cosmology"

   Lead author: conceptualization, funding acquisition, methodology, project administration, software, validation, writing

5. B. Dey, J.A. Newman, B.H. Andrews, R. Izbicki, A.B. Lee, D. Zhao, M.M. Rau, **A.I. Malz**. 2021. Fourth Workshop on Machine Learning and the Physical Sciences NeurIPS 2021. Re-calibrating Photometric Redshift Probability Distributions Using Feature-space Regression (`arXiv:2110.15209`)

   Contributor: conceptualization, methodology, supervision, writing

6. J. Zuntz, F. Lanusse, **A.I. Malz**, A.H. Wright, A. Slosar, et al. 2021. OJA 4. "The LSST-DESC 3x2pt Tomography Optimization Challenge"

   Lead author: conceptualization, formal analysis, methodology, visualization, writing

7. **A.I. Malz**. 2020. PRD 103 083502. "How NOT to obtain the redshift distribution from probabilistic redshift estimates"

   Sole author

8. B. Moews, M.S. Schmitz, A.J. Lawler, J. Zuntz, **A.I. Malz**, R.S. de Souza, R. Vilalta, A. Krone-Martins, E.E.O. Ishida. 2020. MNRAS 500 1 859. "Ridges in the Dark Energy Survey for cosmic trough identification"

   Contributor: conceptualization, methodology, writing

9. S.J. Schmidt, **A.I. Malz**, J.Y.H. Soo, I.A. Almosallam, M. Brescia, S. Cavuoti, J. Johen-Tanugi, A.J. Connolly, J. DeRose, P.E. Freeman, M.L. Graham, K.G. Iyer, M.J. Jarvis, J.B. Kalmbach, E. Kovacs, A.B. Lee, G. Longo, C.B. Morrison, J.A. Newman, E. Nourbakhsh, E. Nuss, T. Pospisil, H. Tranin, R.H. Wechsler, R. Zhou, R. Izbicki. 2020. MNRAS 499 2 1587. "Evaluation of probabilistic photometric redshift estimation approaches for LSST"

   Lead author: conceptualization, formal analysis, investigation, methodology, project administration, software, supervision, validation, visualization, writing

10. N. Kennamer, E.E.O. Ishida, S. Gonzalez-Gaitan, R.S. de Souza, A. Ihler, K. Ponder, R. Vilalta,

A. Moller, D.O. Jones, M. Dai, A. Krone-Martins, B. Quint, S. Sreejitch, **A.I.Malz**, L. Galbany. 2020. IEEE Symposium Series on Computational Intelligence. Active learning with RESSPECT: Resource allocation for extragalactic astronomical transients (`arXiv:2010.05941`)
Contributor: conceptualization, methodology

11. N. Dalmasso, T. Pospisil, A.B. Lee, R. Izbicki, P.E. Freeman, **A.I. Malz**. 2019. As. & Com. 20 100362. "Conditional Density Estimation Tools in Python and R with Applications to Photometric Redshifts and Likelihood-Free Cosmological Inference"
Contributor: data curation, writing

12. B. Moews, R.S. de Souza, E.E.O. Ishida, **A.I. Malz**, C. Heneka, R. Vilalta, J. Zuntz. 2019. PRD 99 123529. "Stress testing the dark energy equation of state imprint on supernova data"
Contributor: conceptualization, formal analysis, investigation, methodology, validation, writing

13. T. Cantat-Gaudin, A. Krone-Martins, N. Sedaghat, A. Farahi, R.S. de Souza, R. Skalidis, **A.I. Malz**, S. Macedo, B. Moews, C. Jordi, A. Moitinho, A. Castro-Ginard, E.E.O. Ishida, C. Heneka, A. Boucaud, A.M.M. Trindade. 2019. A&A 624 A126. "Gaia DR2 unravels incompleteness of nearby cluster population: New open clusters in the direction of Perseus"
Contributor: conceptualization, writing

14. **A.I. Malz**, R. Hložek, T. Allam Jr., A. Bahmanyar, R. Biswas, M. Dai, L. Galbany, E.E.O. Ishida, S.W. Jha, D.O. Jones, R. Kessler, M. Lochner, A.A. Mahabal, K.S. Mandel, J.R. Martinez-Galarza, J.D. McEwen, D. Muthukrishna, G. Narayan, H.V. Peiris, C.M. Peters, K. Ponder, C.N. Setzer. 2019. AJ 158 5 171. "The Photometric LSST Astronomical Time-series Classification Challenge (PLAsTiCC): Selection of a performance metric for classification probabilities balancing diverse science goals"
Lead author: conceptualization, data curation, formal analysis, investigation, methodology, project administration, software, supervision, validation, visualization, writing

15. C. Chang, M. Wang, S. Dodelson, T. Eifler, C. Heymans, M. Jarvis, M.J. Jee, S. Joudaki, E. Krause, **A.I. Malz**, R. Mandelbaum, I. Mohammed, M. Schneider, M. Simet, M.A. Troxel, J. Zuntz. 2018. MNRAS 482 3 3696. "A Unified Analysis of Four Cosmic Shear Surveys"
Contributor: methodology, writing

16. **A.I. Malz**, P.J. Marshall, M.L. Graham, S.J. Schmidt, J. DeRose, R. Wechsler. 2018. AJ 156 0 35. "Approximating photo-z PDFs for large surveys"
Lead author: conceptualization, data curation, formal analysis, funding acquisition, investigation, methodology, software, validation, visualization, writing

17. A.S. Leung, V. Acquaviva, E. Gawiser, R. Ciardullo, E. Komatsu, **A.I. Malz**, G.R. Zeimann, J.S. Bridge, N. Drory, J.J Feldmeier, S.L. Finkelstein, K. Gebhardt, C. Gronwall, A. Hagen, G.J. Hill, D.P. Schneider. 2017. ApJ 843 2 130. "Bayesian Redshift Classification of Emission-Line Galaxies with Photometric Equivalent Widths"
Contributor: conceptualization

18. J.S. Bridge, C. Gronwall, R. Ciardullo, A. Hagen, G. Zeimann, **A.I. Malz**, V. Acquaviva, D.P. Schneider, N. Drory, K. Gebhardt, S. Jogee. 2015. ApJ 799 2 205. "Physical and Morphological Properties of [O II] Emitting Galaxies in the HETDEX Pilot Survey"
Contributor: conceptualization, methodology

19. R. Ciardullo, G.R. Zeimann, C. Gronwall, H. Gebhardt, D.P. Schneider, A. Hagen, **A.I. Malz**, G.A. Blanc, G.J. Hill, N. Drory, E. Gawiser. 2014. ApJ 796 1 64. "HST Emission Line Galaxies at z ~2: The Ly-alpha Escape Fraction"
Contributor: conceptualization, methodology

20. A. Hagen, R. Ciardullo, C. Gronwall, V. Acquaviva, J. Bridge, G.R. Zeimann, G.A. Blanc, N.A. Bond, S.L. Finkelstein, M. Song, E. Gawiser, D.B. Fox, H. Gebhardt, **A.I. Malz**, D.P. Schneider, N. Drory, K. Gebhardt, G.J. Hill. 2014. ApJ 786 1 59. "Spectral Energy Distribution Fitting of HETDEX Pilot Survey Lyman-alpha Emitters in COSMOS and GOODS-N"
Contributor: conceptualization, methodology

Non-standard Publications

LSST-DESC, et al. (incl. **A.I. Malz**) 2020. *LSST-DESC Research Note.* "The LSST-DESC Science Roadmap"
> Contributor: conceptualization, project administration, writing

T. Allam Jr., A. Bahmanyar, R. Biswas, M. Dai, L. Galbany, R. Hložek, E.E.O. Ishida, S.W. Jha, D.O. Jones, R. Kessler, M. Lochner, A.A. Mahabal, **A.I. Malz**, K.S. Mandel, J.R. Martinez-Galarza, J.D. McEwen, D. Muthukrishna, G. Narayan, H.V. Peiris, C.M. Peters, K. Ponder, C.N. Setzer. *LSST-DESC Research Note.* 2018. The Photometric LSST Astronomical Time-series Classification Challenge (PLAsTiCC): Data set (`arXiv:1810.00001`)
> Contributor: conceptualization, methodology, software

A.I. Malz, et al. 2018. "Dance Your Ph.D. 2018/9: Probabilistic methods for cosmological analysis with uncertainty-dominated data" (educational music video)
> **Lead author**: conceptualization, funding acquisition, methodology (choreography), project administration (production), resources (costumes), software (video editing & web maintenance), supervision, visualization

P.J. Marshall, et al. (incl. **A.I. Malz**) 2017. *whitepaper.* Science-Driven Optimization of the LSST Observing Strategy (`arXiv:1708.04058`)
> Contributor: conceptualization, methodology, writing

A.I. Malz. 2017. Cooper Square Review. "Going nowhere fast" (science communication essay)
> **Sole author**

Published Software
AIM's code, including work in progress, is publicly available on GitHub; the following have a DOI corresponding to a formal release.

LSST-DESC CLMassMod Team (incl. **A.I. Malz**). 2021. "`CLMM`".
> **Lead author**: conceptualization, funding acquisition, methodology, project administration, software, supervision, writing (documentation)

A.I. Malz. 2020. "`chippr`".
> **Sole author**

A.I. Malz, et al. 2019. "`ProClaM`".
> **Lead author**: conceptualization, methodology, software, validation, visualization, writing (documentation)

B. Brewer, T.K. Leung & **A.I. Malz**. 2018. "`StarStudded`".
> Contributor: software

A.I. Malz & P.J. Marshall. 2017. "`qp`".
> **Lead author**: conceptualization, methodology, software, validation, visualization, writing (documentation)

Citeable Presentations

A.I. Malz, F. Lanusse, J.F. Crenshaw, M.L. Graham. 2021. American Astronomical Society, AAS Meeting #238, id. 230.04. "`TheLastMetric`: an information-based observing strategy metric for photometric redshifts, cosmology, and more" (contributed poster)
> **Lead author**: conceptualization, formal analysis, investigation, methodology, project administration, software, validation, visualization, writing

J.F. Crenshaw, J.B. Kalmbach, **A.I. Malz**, A.J. Connolly. 2021. American Astronomical Society, AAS Meeting #238, id. 230.01. "`PZFlow`: normalizing flows for cosmology, with applications to forward modeling galaxy photometry" (contributed poster)
> Contributor: supervision, validation

A.I. Malz. 2021. American Astronomical Society, AAS Meeting #238 Meeting-in-a-Meeting: Machine Learning in Astronomy, id. 103.02. "Proceed with caution: how, and how not, to use machine learning to probe cosmology" (invited talk)
> **Sole author**

A.I. Malz. 2021. American Astronomical Society, AAS Meeting #237, id. 443.05. "The DESC Photometric Redshifts Working Group: Challenges & Opportunities" (contributed talk)

Sole author

A.I. Malz. 2019. American Astronomical Society, AAS Meeting #233, Surveys & Large Programs, id. 313.05D. "Probabilistic data analysis methods for large photometric surveys" (contributed talk)

Sole author

A.I. Malz. 2019. American Astronomical Society, AAS Meeting #233, Larger Efforts in Education & Public Outreach, id. 212.05. "The Photometric LSST Astronomical Time Series Classification Challenge (PLAsTiCC): challenge design and evaluation criteria" (contributed talk)

Sole author

C.M. Peters, **A.I. Malz** & R. Hlozek. 2018. American Astronomical Society, AAS Meeting #231, id. 245.03. "Supernova Cosmology Inference with Probabilistic Photometric Redshifts" (contributed poster)

Lead author: conceptualization, data curation, formal analysis, investigation, methodology, software, validation, visualization, writing

A.I. Malz & S. Shandera. 2014. American Astronomical Society, AAS Meeting #223, id. 456.04. "Probing Gravity in the High-Redshift Universe with HETDEX" (contributed poster)

Lead author; conceptualization, data curation, formal analysis, investigation, methodology, visualization, writing

A.I. Malz, R. Rich & S. Lepine. 2009. American Astronomical Society, AAS Meeting #213, id. 602.04. "Low-mass Binaries in the Galactic Halo Resolved by Adaptive Optics" (contributed poster)

Lead author; formal analysis, funding acquisition, investigation, writing