CHUN-HAO TO

chto@stanford.edu

RESEARCH INTERESTS

Observational and Computational cosmology
Cluster abundance cosmology, Large-scale structure, Combined-probe analyses, Galaxy-halo connection

EDUCATION

Ph.D in Physics *2016-Present*
Department of Physics, Stanford University, CA, USA
B.S. in Physics *2011-2015*
Department of Physics, National Taiwan University, Taipei, Taiwan

SCIENTIFIC COLLABORATION

- Dark Energy Survey (DES) [Cluster, Simulation, Theory and combined-probe, and Weak lensing working groups]

TEACHING EXPERIENCE

- The Origin and Development of the Cosmos *Winter 2020*
- Astronomy Laboratory and Observational Astronomy *Fall 2018*
- Electricity and Magnetism Lab *Spring 2017*

PUBLICATIONS

1. **To, C.-H.**, Reddick, R. M., Rozo, E., Rykoff, E., & Wechsler, R. H. 2020, "**RedMaPPer: Evolution and Mass Dependence of the Conditional Luminosity Functions of Red Galaxies in Galaxy Clusters**", *The Astrophysical Journal*, 897, 15
2. DES Collaboration, Abbott, T., Aguena, M., Alarcon, et al. 2020, "Dark Energy Survey Year 1 Results: Cosmological Constraints from Cluster Abundances and Weak Lensing", *arXiv e-prints*, arXiv:2002.11124
3. Korytov, D., Hearin, A., Kovacs, E., et al. 2019, "CosmoDC2: A Synthetic Sky Catalog for Dark Energy Science with LSST", *The Astrophysical Journal Supplement Series*, 245, 26
4. Chuang, C.-H., Yepes, G., Kitaura, F.-S., et al. 2019, "UNIT project: Universe N-body simulations for the Investigation of Theoretical models from galaxy surveys", *Monthly Notices of the Royal Astronomical Society*, 487, 48
5. Zhang, Y., Yanny, B., Palmese, A., et al. 2019, "Dark Energy Survey Year 1 Results: Detection of Intracluster Light at Redshift ~ 0.25", *The Astrophysical Journal*, 874, 165
6. **To, C.-H.**, Wang, W.-H., & Owen, F. N. 2014, "**Star Formation Rate and Extinction in Faint z ~4 Lyman Break Galaxies**", *The Astrophysical Journal*, 792, 139

PUBLICATIONS UNDER INTERNAL REVIEW BY COLLABORATION

7. **To, C.-H.** Krause, E., Rozo, E., Wu, H.-Y., Gruen, D., DeRose, J., Wechsler, R. H., "**Combination of cluster number counts and two-point correlations: Validation on Mock Dark Energy Survey**"

PRESENTATIONS & CONFERENCES

2020

- Dark Energy Survey Virtual Collaboration Meeting *May*
  Talk: Combination of cluster number counts and two-point statistics: Validating Parameter Estimation using Mock Dark Energy Survey

2019

- Dark Energy Survey Collaboration Meeting *Nov*
  Talk: Combining cluster counts and 2pt statistics
  Talk: Lensing is low (Cluster Version)
- Cosmic Controversies *Sep*
  Poster: Combining Cluster Counts and Two-point Statistics
- Great Lake Cosmology Workshop *Aug*
  Talk: Cross-covariances between cluster number counts and 2pt statistics
- Dark Energy Survey Collaboration Meeting *May*
  Talk: N and 3x2pt covariance
- Panchromatic Panoramic Studies of Galaxy Clusters: from HSC to PFS and ULTIMATE *March*
  Poster: Conditional Luminosity Function of Red Galaxies in RedMaPPer Clusters

2018

- Dark Energy Survey Y3KP workshop *Oct*
  Talk: Cluster number counts and 3x2pt covariance
- Tucson DECaLS Workshop *Aug*
  Talk:Finding Clusters in the Legacy Surveys
- Santa Cruz Galaxy Workshop *Aug*
  Talk: The Conditional Luminosity Function of Red Galaxies in Massive Clusters

MENTORING EXPERIENCE

- Kathlynn Simotas, undergrad student at Stanford, Quantifying redMaPPer cluster systematics using galaxies with spectroscopic redshifts, 2019–ongoing

REFERENCES

- Risa H. Wechsler — Email: rwechsler@stanford.edu
  Physics Department, Stanford University
  Stanford, CA 94305, USA
- Eduardo Rozo — Email: erozo@email.arizona.edu
  Department of Physics, University of Arizona
  Tucson, AZ 85721, USA
- Elisabeth Krause — Email: krausee@email.arizona.edu
  Steward Observatory
  Department of Astronomy, University of Arizona
  Tucson, AZ 85721, USA
- Daniel Gruen — Email: dgruen@stanford.edu
  KIPAC / SLAC, Fred Kavli Building
  Menlo Park, CA 94025, USA
- Eli Rykoff — Email: erykoff@slac.stanford.edu
  KIPAC / SLAC, Fred Kavli Building
  Menlo Park, CA 94025, USA