

Steward Observatory
University of Arizona
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EMPLOYMENT

since Aug 2018 **Assistant Professor of Astronomy**, University of Arizona
Assistant Professor of Physics, University of Arizona
Oct 2017 - Aug 2018 **Postdoctoral Researcher**, California Institute of Technology
Oct 2014 – Oct 2017 **Kavli Fellow**, KIPAC, Stanford University/SLAC
July 2012 -Aug 2014 **Postdoctoral Researcher**, University of Pennsylvania

EDUCATION

June 2012 **PhD in Astrophysics**, California Institute of Technology
Sept 2007 **Diplom in Physics**, University of Bonn, Germany

AWARDS & HONORS

2021 Sloan Research Fellowship, Alfred P. Sloan Foundation
2020 Packard Fellowship, David and Lucile Packard Foundation
2020 Maria Goeppert-Mayer Award, American Physical Society
2019 Early Career Research Award, Department of Energy
2018 Young Scientist Award, International Union of Pure and Applied Physics
2014-2017 Kavli Postdoctoral Fellowship, Stanford University
2003-2007 Scholarship, German National Academic Foundation
2005 Student Parabolic Flight Campaign, European Space Agency
2002 National 1st prize, German Science Contest for High-School Students (Jugend forscht)

PUBLICATION RECORD

> **130 refereed publications**, > **11,000 citations**, **h-index 53** (statistics from google scholar)

SELECTED PUBLICATIONS (* indicates student mentees)

1. Krause, E. & Eifler, T.: *CosmoLike – cosmological likelihood analyses for photometric surveys*. MNRAS 470, 2100 (2017)
Significance: introduced consistent multi-probe analysis framework.
2. *Schaan, E., Krause, E. et al.: *Looking through the same lens: shear calibration for LSST, Euclid & WFIRST with stage 4 CMB lensing*. PRD 95,123512 (2017)
Significance: Methodology for joint analysis of galaxy weak lensing and CMB lensing.
3. Krause, E. et al.: *Dark Energy Survey Year 1 Results: Multi-Probe Methodology and Simulated Likelihood Analyses*. arXiv:1706.09359 (2017)
Significance: Developed and validated model for DES-Y1 analyses.
4. The DES Collaboration (Abbott et al.): *Dark Energy Survey year 1 results: Cosmological constraints from galaxy clustering and weak lensing*. PRD 98, 043528 (2018)
Significance: Key cosmology constraints for DES Year 1.

5. *To, C.-H., Krause, E. et al. : *Dark Energy Survey Year 1 Results: Cosmological Constraints from Cluster Abundances, Weak Lensing, and Galaxy Correlations*. PRL 126, 141301 (2021)
Significance: First joint and consistent analysis of clusters, weak lensing and clustering; featured on physics.aps.org.

SCIENCE COLLABORATIONS AND LEADERSHIP

Dark Energy Survey (DES)

- Science Committee Co-Chair, Sept. 2018 – May 2021
- Co-Coordinator, Theory and Combined Probes Working Group, Sept. 2016 – Feb 2019

V. Rubin Observatory, Dark Energy Science Collaboration (DESC)

- Convener, LSST-DESC Theory and Joint Probes Working Group, July 2015 – Feb 2018
- Major Contributor, DESC Science Road Map (developed five-year vision for theory group)

SPHEREx (Nasa astrophysics Midex Mission)

- Co-I Science Team, led Bispectrum modeling and inflation forecasts

MENTORING AND ADVISING

PhD students

Anne Moore, 2020-current (Arizona, 1st year adviser)
Magarete Smith, 2020-2021 (Arizona, 1st year adviser)
Pranjal Singh, 2019-current (Arizona, primary PhD adviser)
Paul Rogozenski, 2018-current (Arizona, primary PhD adviser)
Shivam Pandey, 2017-current (University of Pennsylvania, co-adviser)
Lucas Seco, 2017-2020 (University of Pennsylvania, co-adviser)

Adviser to PhD students on a research project *Chun-Hao To* (Stanford),
Emmanuel Schaan (Princeton), *Youngsoo Park* (University of Chicago)

Postdoc Mentor

Joyce Byun, 2020-current
Xiao Fang, 2018-2021 (Arizona → BCCP Fellow, Berkeley)
Vivian Miranda, 2018-2021 (Arizona → junior faculty, Stony Brook)

PROFESSIONAL EXPERIENCE

- **Member** DOE Cosmic Visions Dark Energy Group (2019-2021)
- **Reviewer** Chilean Science Foundation; Department of Energy *ASCR*, *HEP Comparative Review*, *SCGSR*; European Research Council; NASA: *Astrophysics Theory Program*, *HST TAC*, *NESSF*; NSF: Astronomy Division *Early Career*, *AAG*
- **External PhD Examiner** *Anna Porredon* (UAB, Barcelona), *Matteo Rizzato* (Sorbonne, Paris)
- **SOC chair** DES Collaboration meetings 12/2018, 05/2019, 11/2019, 05/2020, 05/2021
- **Program co-chair and LOC** "Conference for Undergraduate Women in Physics 2022" , University of Arizona
- **Lead Organizer & SOC chair**, "Blind Analysis in High-Stakes Survey Science: When, Why, and How?", SLAC, March 13-15, 2017
- **>90 invited scientific presentations**
 - **plenary talks at major conference series**, incl. ICHEP2016, EPS-HEP2017, TeVPA2017, Dark Matter2018, 234th meeting of American Astronomical Society (2019)