

University of Arizona  
933 N Cherry Ave  
Tucson, AZ 85701

krausee@email.arizona.edu  
Phone: +1 (520) 621-9516

## 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

**APS Maria Goeppert-Mayer Award 2020**

**DOE Early Career Award 2019**

**IUPAP Astrophysics Young Scientist Award 2018**

**Kavli Postdoctoral Fellowship**, Stanford University (2014-17)

**German National Merit Foundation Scholarship 2003-2007**

**Study Abroad Scholarship** Academic Year 2005/06, Diploma thesis research at Harvard

**European Space Agency Student Parabolic Flight Campaign 2005**

Designed, installed, and conducted experiment on *Surface Deformations of Ferrofluids in Weightlessness*

**Junior Prize of the German Astronomical Society, 2002**

**1<sup>st</sup> prize at German National Science Contest for High-School Students, 2002**

Wrote and analyzed N-body simulations of galaxy encounters on home computers

## PUBLICATION RECORD + SELECTED PUBLICATIONS

**96 refereed publications, >4800 citations** (statistics from [inspirehep.net](http://inspirehep.net))

1. Krause, E. et al.: *The Weight of Emptiness: The Gravitational Lensing Signal of Stacked Voids*. ApJ 762, L20 (2013)  
Significance: introduced void lensing as new probe.
2. Krause, E. & Eifler, T.: *CosmoLike – cosmological likelihood analyses for photometric surveys*. MNRAS 470, 2100 (2017)  
Significance: introduced consistent multi-probe analysis framework.
3. 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: Developed methodology for joint analysis of galaxy weak lensing and CMB lensing.
4. 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.

5. 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.

### SCIENCE COLLABORATIONS AND LEADERSHIP

- Dark Energy Survey (DES)
  - **Science Committee Co-Chair**, since Sept. 2018
  - **Co-Coordinator, Theory and Combined Probes Working Group**, Sept. 2016 – Feb 2019
  - **Builder**, since March 2016
- Large Synoptic Survey Telescope (LSST) - Dark Energy Science Collaboration (DESC)
  - **Convener, LSST-DESC Theory and Joint Probes Working Group**, July 2015 – Feb 2018
  - **Project Lead, TJPCosmo** (Joint Probes Cosmology Likelihood), since Feb 2018
  - **Major Contributor**, DESC Science Road Map (developed five year vision for Theory group)
- Wide-Field Infrared Survey Telescope (WFIRST)
  - **Co-I Science Investigation Team**, *Cosmology with the High Latitude Survey* (PI: O. Doré)
- Spectrophotometer for the History of the Universe, Epoch of Reionization, and Ices Explorer (SPHEREx, NASA Astrophysics Explorer mission)
  - **Co-I Science Team**, led Bispectrum modeling and inflation forecasts

### PROFESSIONAL EXPERIENCE

- **more than 80 invited scientific presentations**
  - **plenary talks at major conference series**, incl. ICHEP2016, EPS-HEP2017, TeVPA2017, Dark Matter2018, 234<sup>th</sup> meeting of American Astronomical Society (2019)
  - **recent colloquia** Amsterdam, University of Washington, University of Southern California, Aspen Center for Physics, UCSC, MIT, Stanford, Columbia, Chicago
- **Synergistic Activities**
  - **Member** DOE Cosmic Visions Dark Energy Group (2019-2021)
  - **Reviewer** European Research Council *Consolidator Grants*; NASA: *ATP, HST TAC, NESSF*; Chilean Science Foundation; NSF *Early Career*
  - **External PhD Examiner** *Anna Porredon* (UAB, Barcelona), *Matteo Rizzato* (Sorbonne, Paris)
  - **Lead Organizer & SOC chair**, "Blind Analysis in High-Stakes Survey Science: When, Why, and How?", SLAC, March 13-15, 2017
  - **Session Organizer**, "Comic Accelerations", CPAD Instrumentation Frontier Meeting 2016: New Technologies for Discovery II, Pasadena, Oct 2016

### MENTORING AND ADVISING

- **PhD students** *Paul Rogozenski* (Arizona, primary adviser); *Michael Baumer* (Stanford), *Youngsoo Park* (University of Chicago), *Shivam Pandey* (University of Pennsylvania), *Emmanuel Schaan* (Princeton), *Chun-Hao To* (Stanford)
- **Postdocs** *Xiao Fang* (Arizona), *V. Miranda* (Arizona)
- **Lead of Collaboration-Wide Review Process for 50% of all DES papers** (emphasis on scientific feedback to junior lead-authors)