Shun-Sheng Li

PhD candidate

https://lshuns.github.io/

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Research Interests

Gravitational lensing measurements and applications; Dark matter properties and connection to galaxy formation; Cosmological models and dark energy constraints; Gravitational waves for cosmological study

Research Experience

Research Assistant — 2019 – present
Leiden Observatory, Leiden, the Netherlands

Research Assistant — 2017 – 2019
National Astronomical Observatory of China, Beijing, China

Education

PhD in Astrophysics — 2019 – 2023 (expected)
Leiden University, Leiden, the Netherlands

- Thesis: *Weak gravitational lensing: systematics and applications*
- Advisors: Prof. Koen Kuijken & Prof. Henk Hoekstra

MSc in Astrophysics — 2016 – 2019
University of Chinese Academy of Sciences, Beijing, China

- Thesis: *Gravitational lensing of gravitational waves*
- Advisor: Prof. Shude Mao

BSc in Astronomy — 2012 – 2016
Nanjing University, Nanjing, China

Professional Experience

Collaboration

- Kilo-Degree Survey — 2019–present
  KiDS-Legacy calibration team, galaxies and halos working group
- Euclid Consortium — 2020–present
  Flagship 2.0 validation team, weak lensing science working group

Public Code Development

- MultiBand_ImSim
  A multi-band image simulation pipeline for generating multi-band images and creating joint redshift-shear mock catalogues.

Teaching Experience

Teaching Assistant

- Large-Scale Structure and Galaxy Formation 2022
  Master's course, Leiden University
- Gravitational Lensing 2020
  Master's course, Leiden University

(Co-)supervision

- Margherita Grespan (2020), Shiyang Zhang (2022)
  MSc students, Leiden University

Scholarships and Awards

- National Scholarship for Graduate Students of China 2018
- People's Scholarship 2014, 2015

Publication Statistics

7 total (6 published and 1 submitted), 4 first author and 1 second author.
Total citations: 194, h-index: 5, according to adsabs recorded on October 15, 2022.

Presentations

8 total (3 invited). A complete list is available at *https://lshuns.github.io/talks/*

Invited Talks

3. Intriguing inconsistencies in the growth of structure over cosmic time Sesto, 2022
   Multi-band image simulations to unite the shear and redshift calibrations
2. Leiden-GRAPPA GW cosmology meeting Leiden, 2019
   Gravitational Lensing of Gravitational Waves
1. NAOC galaxy formation lunch talk Beijing, 2018
   Gravitational Lensing of Gravitational Waves

Public Outreach

- Popular science article for *the Mr. Science* 2020
  When gravitational lensing meets gravitational waves (in Chinese)

Publication List

Summary: 7 total (6 published and 1 submitted), 4 first author and 1 second author.
Total citations: 194, h-index: 5, according to adsabs recorded on October 15, 2022.

First-author Publications

4. KiDS-Legacy calibration: Unifying shear and redshift calibration with the SKiLLS multi-band image simulations
   S.-S. Li, K. Kuijken, H. Hoekstra, et al., 2022, submitted to A&A (adsabs).

3. KiDS+VIKING-450: An internal-consistency test for cosmic shear tomography with a colour-based split of source galaxies
   S.-S. Li, K. Kuijken, H. Hoekstra, et al., 2021, A&A, 646A, 175L (adsabs).

2. OGLE-2017-BLG-1186: First Application of Asteroseismology and Gaussian Processes to Microlensing
   S.-S. Li, W. Zang, A. Udalski, et al., 2019, MNRAS, 488, 3308 (adsabs).

1. Gravitational Lensing of Gravitational Waves: A Statistical Perspective
   S.-S. Li, S. Mao, Y. Zhao, et al., 2018, MNRAS, 476, 2220 (adsabs).

Second-author Publications

1. Detecting Lensing-Induced Diffraction in Astrophysical Gravitational Waves
   L. Dai, **S.-S. Li**, B. Zackay, et al., 2018, Phys. Rev. D, 98, 104029 (adsabs).

Other Co-authored Publications

2. Spitzer + VLTI-GRAVITY Measure the Lens Mass of a Nearby Microlensing Event
   W. Zang, et al. (incl. **S.-S. Li**), 2020, ApJ, 897, 180Z (adsabs).

1. Spitzer Microlensing Parallax Reveals Two Isolated Stars in the Galactic Bulge
   W. Zang, et al. (incl. **S.-S. Li**), 2020, ApJ, 891, 3Z (adsabs).