

Stanford



Simon Birrer

Postdoctoral Research Fellow, Physics

Bio

BIO

I am a KIPAC Postdoctoral Fellow at Stanford University since Fall 2019. Before joining Stanford I was a Postdoctoral Researcher at the University of California, Los Angeles (UCLA) in the department of Physics and Astronomy and did my PhD at ETH Zurich in the cosmology research group.

PROFESSIONAL EDUCATION

- Doctor of Science, Eidgenössische Technische Hochschule (ETH Zurich) (2017)
- Master of Science, Eidgenössische Technische Hochschule (ETH Zurich) (2013)
- Bachelor of Science, Eidgenössische Technische Hochschule (ETH Zurich) (2011)

STANFORD ADVISORS

- Risa Wechsler, Postdoctoral Faculty Sponsor

LINKS

- My personal website: <https://sibirrer.github.io>

Research & Scholarship

CURRENT RESEARCH AND SCHOLARLY INTERESTS

My current research focus on dark matter and dark energy. I am using strong gravitational lensing to probe the imprint of dark matter on the structure in our universe and measuring the expansion rate of our universe with time-delay cosmography to probe dark energy.

Publications

PUBLICATIONS

- **The first simultaneous measurement of Hubble constant and post-Newtonian parameter from time-delay strong lensing** *MONTHLY NOTICES OF THE ROYAL ASTRONOMICAL SOCIETY*
Yang, T., Birrer, S., Hu, B.
2020; 497 (1): L56–L61
- **A versatile tool for cluster lensing source reconstruction - I. Methodology and illustration on sources in the Hubble Frontier Field Cluster MACS J0717.5+3745** *MONTHLY NOTICES OF THE ROYAL ASTRONOMICAL SOCIETY*
Yang, L., Birrer, S., Treu, T.
2020; 496 (3): 2648–62
- **Cosmic dissonance: are new physics or systematics behind a short sound horizon?** *ASTRONOMY & ASTROPHYSICS*

Arendse, N., Wojtak, R. J., Agnello, A., Chen, G., Fassnacht, C. D., Sluse, D., Hilbert, S., Millon, M., Bonvin, V., Wong, K. C., Courbin, F., Suyu, S. H., Birrer, et al
2020; 639

- **Core or Cusps: The Central Dark Matter Profile of a Strong Lensing Cluster with a Bright Central Image at Redshift 1** *ASTROPHYSICAL JOURNAL*
Collett, T. E., Buckley-Geer, E., Lin, H., Bacon, D., Nichol, R. C., Nord, B., Morice-Atkinson, X., Amara, A., Birrer, S., Kuropatkin, N., More, A., Papovich, C., Romer, et al
2017; 843 (2)