

LUCAS PORTH

🏠 Argelander-Institut für Astronomie, Auf dem Hügel 71, 53121 Bonn, GER

✉ lporth@astro.uni-bonn.de  [lporth93](#)

RESEARCH INTEREST

Constraining cosmological parameters and testing theories via probes of Weak Gravitational Lensing and Large-Scale-Structure. I am interested in the theoretical, statistical and Bayesian perspective of this challenge.

EMPLOYMENT

Rheinische Friedrich-Wilhelms-Universität Bonn, Bonn, GER *since September 2021*
Postdoctoral researcher

EDUCATION

PhD in Physics & Astronomy, University of Sussex, Brighton, UK *July 2021*
Thesis: Cosmological information from moments and Bayesian reconstruction methods
(advisors: R. E. Smith, J. Loveday)



M.Sc. in Physics, Ludwig-Maximilians-Universität München, Munich, GER *July 2017*
Thesis: Nonlinear structure formation and the Halo Model (advisor: J. Weller)
Overall Grade: 1.3 (GPA 3.7)

B.Sc. in Physics, Ludwig-Maximilians-Universität München, Munich, GER *July 2014*
Thesis: The Kerr-Metric: A comprehensive analysis (advisor: H. Lesch)
Overall Grade: 1.3 (GPA 3.7)

SELECTED PUBLICATIONS

For an up-to-date list you can head over to ADS [here](#).

Journal Articles

- 1 **Porth, L.**, & Smith, R. E. (2021). Fast estimation of aperture-mass statistics - II. Detectability of higher order statistics in current and future surveys. *Monthly Notices of the Royal Astronomical Society*, 508(3), 3474–3494.  <https://doi.org/10.1093/mnras/stab2819>
- 2 **Porth, L.**, Smith, R. E., Simon, P., Marian, L., & Hilbert, S. (2020). Fast estimation of aperture mass statistics - I. Aperture mass variance and an application to the CFHTLenS data. *Monthly Notices of the Royal Astronomical Society*, 499(2), 2474–2492.  <https://doi.org/10.1093/mnras/staa2900>

Submitted

- 1 **Porth, L.**, Bernstein, G. M., Smith, R. E., & Lee, A. J. (2021). *The Information Content of Projected Galaxy Fields*. arXiv: [2111.13702](#) [[astro-ph.CO](#)].

SELECTED TALKS AND POSTER PRESENTATIONS

01/2022	University of Chicago , <i>KICP lunch discussion</i> , Chicago, IL (virtual). "The Information Content of Projected Galaxy Fields "
11/2021	University of Bonn , <i>AIa Lens Seminar</i> , Bonn, GER (virtual). "Fast and Efficient Estimators for Weak Lensing Surveys"
12/2020	Euclid consortium , <i>Euclid UK Meeting</i> (virtual). "Fast and Efficient Estimators for Weak Lensing Surveys"
11/2020	University of Sussex , <i>Extragalactic Seminar</i> , Brighton, UK (virtual). "Fast and Efficient Estimators for Weak Lensing Surveys"
11/2020	University of Portsmouth , <i>South Coast Cosmology</i> , Portsmouth, UK (virtual). "Fast and Efficient Estimators for Weak Lensing Surveys"
02/2020	University of Sussex , <i>Extragalactic Seminar</i> . "Bayesian Mass Reconstruction"
07/2018	University College London , <i>STFC Summer School</i> , London, UK. Poster presentation on "Weak Gravitational Lensing"
05/2018	University of Sussex , <i>Extragalactic Seminar</i> (virtual). "Weak Gravitational Lensing"

SELECTED CONFERENCES/MEETINGS ATTENDED

University of Portsmouth	2020	South Coast Cosmology
University Of Oxford	2018	Statistical Challenges for Large-Scale Structure in the era of LSST
University of Valencia	2018	Statistical Challenges in 21st Century Cosmology
Royal Observatory Edinburgh	2018	LSST sprint week

TEACHING EXPERIENCE

AT work at Sussex	2017/2018	Thermal and Statistical Physics
	2018/2019	Properties of Matter
	2018/2019	Our Place in the Universe
	2019/2020	Mathematical Methods 3
Private Tutoring	2015-2017	For undergraduate students in Physics and Mathematics degrees
Commercial Tutoring	2015-2017	Private tutoring and workshops for intermediate sized groups (Company: Lernerfolg3)

SKILLS

Languages	German	Mother Tongue
	English	Fluent
	Spanish	Basic conversation
IT & Programming	Python	Intermediate - advanced usage
	C/C++	Intermediate usage
	Latex	Intermediate usage
	Shell scripting	Basic - intermediate usage
	HPC	Basic - intermediate usage
	SQL	Basic usage
	Git	Basic usage