Richard Stiskalek

CONTACT INFORMATION

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RESEARCH INTERESTS

Gravitational-wave cosmology, galaxy formation, galaxy–halo connection, Bayesian inference

EDUCATION

Ludwig-Maximilians-Universität München, Munich, Germany 2020 – present
M.Sc. Physics, with a research thesis in Astrophysics

University of Glasgow, Glasgow, UK 2016 – 2020
B.Sc. Physics with Astrophysics with Honours of the First Class, GPA 21.3/22.0 (1st in class)

Hong Kong University of Science and Technology, Kowloon, HK 2017 – 2018
Undergraduate Student Exchange Program, GPA 3.7/4.3

WORK EXPERIENCE

Research Intern, Max Planck Institute for Gravitational Physics (Hannover) 06/2020 - 09/2020
Project: "EPSIE: an Embarrassingly Parallel Sampler for Inference Estimation"
Supervisor: *Dr Collin Capano*
- Added support for several Euclidean and non-Euclidean proposal distributions in *EPSIE* (a Markov Chain Monte Carlo sampler), a reversible-jump MCMC support, and flexible jump interval durations

Research Intern, University of Oxford 07/2019 - 09/2019
Project: "The dependence of subhalo abundance matching on galaxy photometry and selection criteria"
Supervisor: *Dr Harry Desmond*
- Tested fundamental assumptions of clustering-fitted parametrised subhalo abundance matching modelling in both optically and HI-selected regimes, showed that the scatter in the galaxy–halo connection substantially increases in the faint galaxies and extended the domain of validity of the model

Research Intern, University of Glasgow 06/2018 - 09/2018
Project: "Are stellar–mass binary black hole mergers isotropically distributed?"
Supervisors: *Dr John Veitch and Dr Chris Messenger*
- Created a Bayesian model quantifying isotropy of the underlying angular distribution of the detected stellar-mass binary black hole mergers

Data Analysis Intern, Amper Market, Prague, Czech Republic 06/2017 - 09/2017
- Examined imbalances in the electricity network, designed a model predicting the future behaviour of the market and wrote a specialised Python accounting program to manage the company's expired invoices

Seafood Processor, Silver Bay Seafoods, Naknek, Alaska, USA 06/2016 - 09/2016
- Assisted with shipping and operating the freezer in a salmon processing plant while working 16-hours shifts in challenging working conditions

PUBLICATIONS

1. "The dependence of subhalo abundance matching on galaxy photometry and selection criteria" **R. Stiskalek**, H. Desmond, T. Holvey, M. G. Jones. MNRAS submitted (2021). [arXiv:2101.02765]

2. "Are stellar-mass binary black hole mergers isotropically distributed?" **R. Stiskalek**, J. Veitch & C. Messenger. MNRAS 501:970. [arXiv:2003.02919]

AWARDS AND CERTIFICATES

Kerr Bursary, University of Glasgow, School of Physics & Astronomy 2020
Lang Scholarship, University of Glasgow, School of Physics & Astronomy 2019
Undergraduate Summer Bursary, Royal Astronomical Society 2018
Dean's List, Hong Kong University of Science and Technology, School of Science 2018
Astronomy 1 Prize, University of Glasgow, School of Physics & Astronomy 2017
Matthew A Muir Bursary, University of Glasgow, School of Mathematics & Statistics 2017
South East Asia Study Abroad Scholarship, University of Glasgow 2017

COMMUNITY INVOLVEMENT

Middle of Scotland Science Festival, Volunteer organiser 2018

SKILLS

Technical: Bayesian inference, numerical programming, machine learning, web scraping

Programming languages: Python, C++, C Shell, LaTeX

Natural languages: English, Czech, Slovak, French (intermediate), German (beginner)

INTERESTS

Philosophy and history of Physics, sci-fi and fantasy novels, long-distance running