

## Curriculum Vitae

Name: Stefan Hackstein

Address: Horner Landstr. 372, 22111 Hamburg

Born: Wesel (NRW, Germany) 12. Feb. 1990

Nationality: German

family status: single

**Languages:**

German: Mother language

English: fluent

French: intermediate

Dutch: intermediate

Spanish: intermediate



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Personal home page: [github.com/shackste/publications](https://github.com/shackste/publications)

**Present Position:**

Research assistant and PhD student

Hamburg Observatory (University of Hamburg)

Gojenbergsweg 112, 21029 Hamburg,

Germany

## Formation and Career

- 05/2017 - 07/2020    PhD student with the University of Hamburg  
 Duties:  
 - conduct and execute research plan  
 - analytical, semi-analytical & numerical simulations  
 - publication of research results in journals and conferences  
 - software engineering  
 - teach exercise courses  
 Tools:  
 - PYTHON, C, C++  
 - magnetohydrodynamical simulation software ENZO  
 - high performance computing cluster  
 - my own statistical software package PREFRBLE: [github.com/shackste/PreFRBLE](https://github.com/shackste/PreFRBLE)  
 Thesis title: Measure cosmic magnetic fields with extreme astrophysical messengers
- 07/2015 - 07/2020    Research assistant with the University of Hamburg  
 Duties:  
 - data science  
 - big data analysis  
 - model evaluation  
 - statistical inference  
 Tools:  
 - IDL, R  
 - Bayesian statistics  
 - Monte-Carlo experiments
- 04/2015 - 08/2017    University of Hamburg  
 Master of Science, Physics  
 Focus: Particle physics & Astrophysics  
 Grade: 1.63, Thesis: 1.0  
 Thesis title: On the propagation of ultrahigh-energy cosmic rays in the local Universe
- 10/2011 - 07/2015    University of Hamburg  
 Bachelor of Science, Physics  
 Grade: 1.90, Thesis: 1.0  
 Thesis title: Ultrahigh-energy cosmic rays and the study of cosmic magnetism
- 08/2010 - 08/2011    Travel Europe
- 08/2009 - 07/2010    Max-Weber-Berufskolleg, Düsseldorf  
 Abitur  
 Focus: maths, business administration  
 Grade: 3.0
- 08/2007 - 07/2009    Hermann Janßen GmbH, Alpen & Mercator Berufskolleg, Moers  
 Office administrator apprenticeship  
 Duties:  
 - recording and filing of orders and other data  
 - customer service  
 - measurement of construction sites  
 - proposal preparation  
 Tools:  
 - MS-office  
 Grade: 3.66

## Awards

2017: award for best teaching class at physics department of University Hamburg

## Additional Activity

2019: Tutoring high school students in experiments

2018: Preparing and executing public experiment in course of open day at Observatory Bergedorf

2017 - 2019: Teacher of exercise classes (quantum and theoretical physics) at University of Hamburg

2013 - 2015: Tutor (quantum and theoretical physics) at University of Hamburg

## Skills

scientific research, advanced mathematics, data science, statistics, data visualization, high-performance and parallel computing, software development, git, Linux, MS-Office

Programming languages:

**Python**, **LaTeX**, IDL, C, C++, MATHEMATICA, MAPLE, *R*, *java(script)* ...  
( **daily usage**, experienced, *basics* )

## Hobbies

Musician (Drums, Guitar, Piano), Writer, Hiking

## Interests

scientific development, economy and economics, game theory, psychology

## Publications:

**Hackstein, S.**, Brüggen, M., Vazza, F.. 2020, MNRAS, in proc., "Fast radio burst redshift distribution and the missing baryons"

**Hackstein, S.**, Brüggen, M., Vazza, F., Rodrigues, L. F. S. 2020, MNRAS, in subm., "Redshift estimates for fast radio bursts and implications on intergalactic magnetic fields"

**Hackstein, S.**, Vazza, F., Brüggen, M., Gaensler, B. M., Heesen, V. 2019, MNRAS, 488, 4220-4238, "Fast radio burst dispersion measures and rotation measures and the origin of intergalactic magnetic fields"

**Hackstein, S.**, Vazza, F., Brüggen, M., Sorce, J. G., Gottlöber, S. 2019, Proceedings of IAU Focus Meeting 8, 103-104, "Propagation of UHECRs in the local Universe and origin of cosmic magnetic fields"

Boulanger, F., Enßlin, T., Fletcher, A., Girichides, P., **Hackstein, S.**, Haverkorn, M., Hörandel, J. R., Jaffe, T., Jasche, J., Kachelrieß, M., Kotera, K., Pfrommer, C., Rachen, J. P., Rodrigues, L. F. S., Ruiz-Granados, B., Seta, A., Shukurov,

A., Sigl, G., Steininger, T., Vacca, V., van der Velden, E., van Vliet, A., Wang, J., 2018, JCAP, 2018, 049, "IMAGINE: a comprehensive view of the interstellar medium, Galactic magnetic fields and cosmic rays"

**Hackstein, S.**, Vazza, F., Brüggen, M., Sorce, J. G., Gottlöber, S. 2018, MNRAS, 475, 2519-2529, "Simulations of ultra-high Energy Cosmic Rays in the local Universe and the origin of Cosmic Magnetic Fields"

Vazza, F., Brüggen, M., Gheller, C., **Hackstein, S.**, Wittor, D., and Hinz, P. M., 2017, CQG, 34, 23, "Simulations of extragalactic magnetic fields and of their observables"

**Hackstein, S.**, Vazza, F., Brüggen, M., Sigl, G., Dundovic, A. 2016, MNRAS, 462, 3660-3671, "Propagation of ultrahigh energy cosmic rays in extragalactic magnetic fields: a view from cosmological simulations"