

✉ lboess@usm.lmu.de
💻 <https://LudwigBoess.github.io>
📞 +49 151 / 15 35 78 27

🌐 LudwigBoess

📅 October 4th 1991
🗣 GER, EN, FR, IT
🏠 MÜHLBAURSTR. 12
81677 MUNICH, GER

Education

2020–now
Munich

Astrophysics, PhD, Ludwig-Maximilians-Universität

Thesis: Cosmic Rays, Turbulence and Magnetic Fields in Galaxy Clusters.
Supervisors: Prof. Dr. Harald Lesch, Dr. habil. Klaus Dolag

2017–2020
Munich

Astrophysics, M.Sc., Ludwig-Maximilians-Universität

GPA: 4.0
Thesis: Cosmic Rays in Galaxy Clusters - An on-the-fly Fokker-Planck Solver for Open-Gadget3; Supervisor: Dr. habil. Klaus Dolag

2014–2017
Munich

Physik, B.Sc., Ludwig-Maximilians-Universität

GPA: 2.7
Thesis: Radial Orbit Instability - Analysis of geometry in unperturbed and perturbed systems; Supervisor: Prof. Dr. Andreas Burkert

2011–2014
Munich

Musicology, B.A., Ludwig-Maximilians-Universität

GPA: 3.0
Thesis: Witold Lutoslawski's Concerto for Orchestra in the context of Socialist Realism; Supervisor: Prof. Dr. Wolfgang Rathert

2011
Munich

Highschool Diploma, Theodolinden Gymnasium

GPA: 3.3
Majors: English and Music

Conferences and Workshops

August 2022

International Astronomical Union General Assembly, Busan, KOR

July 2021

MIAPP workshop - High energy phenomena in astrophysics, Munich, GER

July 2021

ICRC 2021, online

February 2020

Hydrosim Meeting 2020, Munich, GER

Computing Time

2022

C2PAP Computing Grant (PI), Galaxy Clusters with Spectral Cosmic Rays
5 Million CPUh

2020

GAUSS Large Scale Project (co-I, PI: Dolag), COMPASS
50 Million CPUh

Teaching

2022	Masters Thesis , Student: Daniel Karner Assisting supervisor
2022	Astrophysics III , Lecture: Prof. Harald Lesch Teaching Assistant
2021	Astrophysics II , Lecture: Prof. Harald Lesch Teaching Assistant
2021	Bachelor Thesis , Student: Julian Sommer Assisting supervisor
2020	Theoretical Astrophysics , Seminar: Prof. Harald Lesch Teaching Assistant
2020	Astrophysics I , Lecture: Prof. Harald Lesch Teaching Assistant

Public Outreach

2023	Café & Kosmos , Outreach event by ORIGINS/LMU/TUM Public Talk
2021	Entropia , Podcast Interview
2019	BR Campus Magazin , TV documentary Interview
2019	Tag der Physik , Public outreach day of the LMU physics department Mentor
2016-2019	LMU Campus Tag , Public outreach day of the LMU Mentor

Work experience

<i>March 2023–Now</i> <i>Munich/Garching</i> RESEARCH UNIT MANAGER	Excellence Cluster ORIGINS , Turbulence Connector Tasks: <ul style="list-style-type: none">> Organisation of monthly collaboration meeting.> Summary of ongoing projects for scientific outreach.> PI rights (e.g. steering, visitor invitation)
<i>Jan. 2017–March 2019</i> <i>Munich/Haar</i> WORKING STUDENT	attocube Systems AG , Customer Success / Business Intelligence Process optimisation and data analysis, e.g.: <ul style="list-style-type: none">> Development of an automated customer satisfaction survey (NPS) using SSIS and Python.> Gathering and evaluating of key data concerning quality assurance, customer satisfaction and R&D.

Publications

- 2023 **CRESCENDO: An on-the-fly Fokker-Planck Solver for Spectral Cosmic Rays in Cosmological Simulations**, Böss, L., Steinwandel, U., Dolag, K., Lesch, H., MNRAS, 519,1, pp.548-572
- in prep.* **Simulating the LOcal Web (SLOW) - IV: The Synchrotron Cosmic Web**, Böss, L., Dolag, K., Steinwandel, U., Hernández-Martínez, E., Sorce, J., Aghanim, N.
- in prep.* **Simulating the LOcal Web (SLOW) - V: γ -Ray Emission in Local Clusters**, Böss, L., Khabibullin, I., Dolag, K., Steinwandel, U., Hernández-Martínez, E., Sorce, J., Aghanim, N.
- in prep.* **Galaxy Cluster simulations with a spectral CR model**, Böss, L., Steinwandel, U., Dolag, K.
- 2022 **Insights on the origin of ORCs from cosmological simulations**, Dolag, K., Böss, L., Koribalski, B., Steinwandel, U., Valentini, M., arXiv:2208.15003
- Contributions:* Post-processing of the CR component, related figures and chapters in the paper.
- 2022 **Virgo: Scalable Unsupervised Classification of Cosmological Shock Waves**, Lamparth, M., Böss, L., Steinwandel, U., Dolag, K., arXiv:2208.06859
- Contributions:* Scientific input, development contribution, all figures in publication.
- 2022 **On the small scale turbulent dynamo in the intra cluster medium: A comparison to dynamo theory**, Steinwandel, U., Böss, L., Dolag, K., Lesch, H., ApJ, 933, 2, 131
- Contributions:* Analysis tools and scripts. Related test simulations.
- in prep.* **Simulating the LOcal Web (SLOW) - III: Radio Halos in the Local Universe**, Dolag, K., Böss, L., Sorce, J., Aghanim, N.
- Contributions:* Analysis of the Cosmic Ray related results.
- 2019 **WVTICs - SPH initial conditions for everyone**, Arth, A., Donnert, J., Steinwandel, U., Böss, L., et. al., arXiv:1907.11250
- Contributions:* Implementation of the artificial bias correction and writing the corresponding section. Rerunning the tests and figures for the paper.

Skills

Languages

German	First language
English	Fluent
French	Conversation skills
Italian	Basic communication skills

Programming skills

Julia	●●●●○	C/C++	●●●●○	Fortran	●●●○○	Python	●●●○○
SQL	●●●●○	HTML/CSS	●●○○○				