


# Laurin Söding


PhD student


Institute for Theoretical Physics and Cosmology (TTK)  
RWTH Aachen University, Sommerfeldstr. 16  
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## Curriculum Vitæ

January 2025

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## Education




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- since 2022 > **Ph.D. student**, Institute for Theoretical Physics and Cosmology (TTK), RWTH Aachen University.
- 2019 – 2022 > **M.Sc. Physics**, Institute for Theoretical Physics, Ruprecht Karl University of Heidelberg, final grade: 1.2 (“very good”).  
Thesis title: *Fuzzy Dark Matter Dynamics in the Early Universe within Kinetic Field Theory*.
- 2016 – 2019 > **B.Sc. Physics**, Institute for Astrophysics, Georg August University of Göttingen, final grade: 1.7 (“good”).  
Thesis title: *Simulating Interference Effects of Axion Dark Matter*.


## Publications

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### Journal Articles

- L. Söding**, G. Edenhofer, T. A. Enßlin, *et al.*, “Spatially coherent 3D distributions of HI and CO in the Milky Way,” *A&A*, vol. 693, A139, 2025.  DOI: 10.1051/0004-6361/202451361.
- A. Ramírez, G. Edenhofer, T. A. Enßlin, *et al.*, “The influence of the 3D Galactic gas structure on cosmic-ray transport and gamma-ray emission,” *arXiv e-prints*, arXiv:2407.02410, arXiv:2407.02410, Jul. 2024.  DOI: 10.48550/arXiv.2407.02410. arXiv: 2407.02410 [astro-ph.HE].
- A. Laguë, J. R. Bond, R. Hložek, D. J. E. Marsh, and **L. Söding**, “Evolving ultralight scalars into non-linearity with Lagrangian perturbation theory,” *MNRAS*, vol. 504, no. 2, pp. 2391–2404, Jun. 2021.  DOI: 10.1093/mnras/stab601. arXiv: 2004.08482 [astro-ph.CO].

### Conference Proceedings

- L. Söding**, P. Mertsch, and V. H. M. Phan, “Bayesian inference of 3D densities of galactic HI and H<sub>2</sub>,” vol. ICRC2023, 2023, p. 658.  DOI: 10.22323/1.444.0658. arXiv: 2309.14075 [astro-ph.GA].

## Teaching

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- winter term 2024/25 > **Tutoring**, Theoretical Physics 2 (Electrodynamics).  
**Supervision**, Bachelor’s thesis, *Stellar dynamics and the local dark matter density*.
- summer term 2024 > **Tutoring**, Theoretical Physics 3 (Quantum mechanics).
- winter term 2023/24 > **Tutoring**, Theory of Relativity and Cosmology.
- summer term 2023 > **Tutoring**, Theoretical Physics 1 (Classical mechanics).
- winter term 2017/18 > **Tutoring**, Introductory courses, Analysis 1.

## Skills

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- Languages > German (native), English (fluent), French (beginner)

## Skills (continued)

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Coding > Proficient in Python, C++, C; Working knowledge of HTML, JS, CUDA

## References

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Available on request