

Joel Wesenberg

Curriculum Vitae

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Education

- 10/2022–10/2024 **M.Sc. in Physics**, GPA: 3.6/4, RWTH Aachen, Aachen, Germany
- **M.Sc. Thesis:** "*Simulation of non-linear dynamics in the early universe leading to Primordial Black Holes and/or Gravitational Waves*," under supervision of **Prof. Julien Lesgourgues**
- 10/2018–05/2022 **B.Sc. in Physics**, GPA: 3.2/4, RWTH Aachen, Aachen, Germany
- **B.Sc. Thesis:** "*Simulation of various tissue-equivalent gases for drift chambers*," under supervision of **Prof. Stefan Roth**
- 08/2010–07/2018 **High school diploma**, GPA: 3.2/4, Gymnasium Lindlar, Lindlar, Germany

Research Interests

- Theories of quantum gravity/string theory
- Inflationary cosmology
- Theories of modified gravity
- QFT/collider physics

Research Experiences

- 02/2022–05/2022 **Bachelor thesis**, RWTH-Aachen, physics institute III.B, under supervision of Prof. Stefan Roth
- **Simulation of the energy deposition of various particles in tissue-equivalent gas mixtures with Geant4 and Heed**
- 10/2023–10/2024 **Master thesis**, RWTH-Aachen, Institute for Theoretical Particle Physics and Cosmology, under supervision of Prof. Julien Lesgourgues
- **Simulation of a hybrid inflationary model of the early universe with CosmoLattice, examining the topological defects leading to primordial black holes and gravitational waves**

Course Projects & Teaching Experiences

- **Neutron stars, black holes and ultra-high energy cosmic rays**
voluntary course offered by the university
- 05/2022 – 09/2022 **Tutoring job**, Teaching children the fundamentals of mathematics, Lindlar, Germany

Activities & Awards

- CosmoLattice School, Valencia, Spain, September 2023
- Abitur graduation prize and membership awarded by German Physical Society (DPG)

Skills

- programming experience in Python, C and C++
- mathematical knowledge in complex and functional analysis
- knowledge in QFT and general relativity

Languages

- **German:** native speaker
- **English:** fluent

Interests

- playing soccer
- reading
- coding
- writing
- meeting and/or playing video games with friends

References

- **Supervisor: Julien Lesgourgues**

Physics

Faculty of mathematics, physics and computer science

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Aachen, Germany

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