



Dr. Marco Hufnagel

Curriculum Vitae

Personal Details

Gender Male
Place of birth Meschede, Germany
Date of birth 16/07/1991
Citizenship German

Skills

Languages German (native - C2), English (fluent - C1)
Programming C/C++, Python, Java, Bash, Mathematica
Libraries GSL, BOOST, NUMPY, SCIPY, MATPLOTLIB, NUMBA,
FEYNARTS, FEYNRULES, FEYNCALC, CALCHEP

Research Interests

Keywords particle physics - cosmology connection, cosmology of theories beyond the SM, dark-matter theory, big bang nucleosynthesis, dark-matter production mechanisms

Academic Career

11/20 - Today **Postdoctoral Researcher**, *Université libre de Bruxelles*, Brussels, Belgium.
06/20 - 11/20 **Postdoctoral Researcher**, *DESY Hamburg*, Hamburg, Germany.

Grants

10/21 - 10/24 **FNRS (CR)**, *Université libre de Bruxelles*, *Grading of proposal: outstanding (A+)*.
Project : Dark sectors in the early Universe: From primordial nucleosynthesis to hidden-sector freeze-out
Promotor : Prof. Dr. Michel Tytgat (*Université libre de Bruxelles*)

Education

01/17 - 06/20 **Dr. rer. nat.**, *Hamburg University*, Hamburg, *with distinction (summa cum laude)*.
Thesis Title : Primordial Nucleosynthesis in the Presence of MeV-scale Dark Sectors
Supervisor : Dr. Kai Schmidt-Hoberg (*DESY Hamburg*)
10/14 - 11/16 **M. Sc. (Physics)**, *RWTH Aachen University*, Aachen, *very good (1.1)*.
Focus of Study : Quantum Field Theories and Gauge Theories
10/11 - 09/14 **B. Sc. (Physics)**, *RWTH Aachen University*, Aachen, *with distinction (1.0)*.
08/02 - 07/11 **Abitur | A-level**, *Gymnasium der Stadt, Meschede*, *very good (1.0)*.

Awards and Achievements

- 11/2021 **Cover page of Phys. Rev. Lett. Vol. 127 Iss. 19** for arXiv:2103.16572
- 02/2015 **Schöneborn Award** (best B. Sc. in physics of the year), *RWTH Aachen University*
- 2012 - 2014 Member of the **Dean's List**, *RWTH Aachen University*
- 07/2011 **DPG High School Prize**, *German Physical Society (DPG)*

Outreach

- 09/2021 **Special guest** on the show *Two theoretical physicists answer all your questions!* on *Happs* by Deanna C. Hooper, <https://happs.tv/post/GMqsENX7ge4zy00AkIep>

Referee@

- JHEP **Journal of High Energy Physics**

Invited Talks

- 05/2022 **Weekly Theory Seminar**, *University of Oslo*
Oslo, Norway
- 12/2020 **Theory Seminar**, *University of Bonn*
Bonn, Germany
- 12/2020 **HEP Lunchtime Seminar**, *University of Minnesota Twin Cities*
Minnesota, United States
- 11/2020 **High Energy Phenomenology Seminar**, *University of Illinois Urbana-Champaign*
Illinois, United States
- 06/2020 **Dalitz Seminar in Fundamental Physics**, *University of Oxford*
Oxford, United Kingdom
- 05/2020 **Phenomenology Seminar**, *Heidelberg University*
Heidelberg, Germany

Teaching Experience

- WS 2021/22 **Tutor** for *Solitons and instantons in quantum field theory*, Prof. Dr. Petr Tinyakov
Université libre de Bruxelles (Service de Physique Théorique)
- SS 2018 **Single Lecture** on *Cosmological evidence for dark energy*,
DESY Workshop Seminar 2018, DESY Hamburg
- SS 2017 **Single Lecture** on *Laser Interferometer*,
DESY Workshop Seminar 2017, DESY Hamburg
- WS 2013/14 **Tutor** for *Higher Mathematics III*, Prof. Dr. Christof Melcher
RWTH Aachen University (Department of Mathematics I)

Other Experience

- 01/18 - 10/20 **Student IT Admin**, *DESY Theory Group, DESY Hamburg*

Schools

- 06/17 - 07/17 **ISAPP 2017 Texel**, *The Dark and the Visible Side of the Universe*
<https://indico.cern.ch/event/568904/>