

Michael Hartmann

👤 born 27 October 1987
🎓 Ph.D. in theoretical physics
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Working Experience

- since 11.2019 **Embedded Software Engineer, Infineon Technologies.**
until 05.21: C/C++ developer for embedded and non-embedded software
since 05.21: product owner for *Radar Development Kit*; leading an agile team of 5 to 8 developers; responsible for full development including planning tasks, devising the software architecture, engaging with stakeholders and users, testing, quality, and releases
- 04.2019–10.2019 **Physics Engineer – Physical Optics & Geometry, BIT Technology Solutions.**
development of a physically based renderer in C++ for applications in autonomous driving, high-frequency simulations of Radar
- 09.2014–03.2019 **Research fellow, University of Augsburg.**
researcher in the areas of open quantum systems and Casimir effect, tutor i.a. for Quantum Mechanics, Quantum Computing, Field Theories, and Python, administrator of the chair's computer infrastructure
- 2008–2015 **Developer and programmer for embedded systems, embedded projects GmbH.**
development of firmware for microcontrollers (8bit to 32bit), adapting Linux to embedded boards including compilation of the Linux kernel and back-porting of kernel drivers
- 2014–2018 **Doctoral studies, University of Augsburg, (grade: summa cum laude).**
Ph.D. thesis: *Casimir effect in the plane-sphere geometry: Beyond the proximity force approximation*

Skills

- Languages 🇩🇪 German (native), 🇬🇧 English (business fluent)
Soft Skills independence, motivation, initiative, flexibility
Hard Skills analytical thinking, mathematical and numerical skills, attention to details
Programming ○ Python, C, C++ (excellent)
Languages ○ Bash, Java, Lua, HTML, powershell, Matlab, Perl (basics)
Tools Linux, \LaTeX , git, cmake, docker, sanitizers, valgrind, gcovr, gcc, clang
HPC CUDA, high performance computations using MPI and OpenMP

Honors and Awards

- 2022 **Winner of Application Note contest.**
1st prize for application note about Digital Beamforming in Infineon internal contest for radar application notes

2019 **Wissenschaftspreis der Universität Augsburg.**
awarded by the University Augsburg for outstanding bachelor/master/Ph.D. theses

List of Publications

- 2020 ○ Hartmann, Ingold, "CaPS: Casimir Effect in the Plane-Sphere Geometry", J. of Open Source Softw., 5(45)
- 2019 ○ Henning, Spreng, Hartmann, Ingold, Maia Neto, "The role of diffraction in the Casimir effect beyond the proximity force approximation", J. Opt. Soc. Am. B **4**, C77-C87
- 2018 ○ Hartmann, Ingold, Maia Neto, "Advancing numerics for the Casimir effect to experimentally relevant aspect ratios", Phys. Scr. **93**, 114003
 - Spreng, Hartmann, Henning, Maia Neto, Ingold, "Proximity force approximation and specular reflection: Application of the WKB limit of Mie scattering to the Casimir effect", Phys. Rev. A **97**, 062504
- 2017 ○ Volokitin, Liniov, Meyerov, Hartmann, Ivanchenko, Hänggi, Denisov, "Computation of the asymptotic states of modulated open quantum systems with a numerically exact realization of the quantum trajectory method", Phys. Rev. E **96**, 053313
 - Hartmann, Poletti, Ivanchenko, Denisov, Hänggi, "Asymptotic Floquet states of open quantum systems: The role of interaction", New J. Phys. **19**, 083011
 - Hartmann, Ingold, Maia Neto, "Plasma vs Drude modelling of the Casimir force: Beyond the proximity force approximation", Phys. Rev. Lett. **119**, 043901
- 2015 ○ Umrath, Hartmann, Ingold, Maia Neto, "Disentangling geometric and dissipative origins of negative Casimir entropies", Phys. Rev. E **92**, 042125
 - Ingold, Umrath, Hartmann, Guérout, Lambrecht, Reynaud, Milton, "Geometric origin of negative Casimir entropies: A scattering-channel analysis", Phys. Rev. E **91**, 033203

Hobbies

- Running four semesters course instructor for running at the University of Augsburg
- Linux two times main organizer of the *Linux information day Augsburg* with about 200 visitors, four years head of the managing committee of the Linux User Group Augsburg e.V.
- Food Passionate about cooking and good food