
OSCAR HENRIKSSON

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Personal details

- ORCID ID: 0000-0001-6957-7447
- Born: May 9, 1988 in Mariehamn, Åland Islands, Finland.
- Nationality: Finnish

Degrees

- 12.5.2017 | Ph.D. in physics | University of Colorado Boulder, USA
(Dept. of Physics contact details: Phone +1 303 492 6952, email physics@colorado.edu)
- 10.5.2013 | M.Sc. in physics | University of Colorado Boulder, USA
- 1.2.2011 | B.Sc. in physics | Uppsala University, Sweden

Language skills

Swedish (native), English (fluent), French (intermediate), Finnish (elementary).

Current employment

- Sep. 2023 – present | University Lecturer (fixed-term) | Åbo Akademi University, Finland
- Sep. 2023 – present | Visiting Researcher | Helsinki Institute of Physics, Finland

Previous work experience

- Sep. 2020 – Aug. 2023 | Academy of Finland Postdoctoral Researcher | University of Helsinki & Helsinki Institute of Physics, Finland
- Sep. 2017 – Aug. 2020 | Postdoctoral Researcher | University of Helsinki & Helsinki Institute of Physics, Finland
- Sep. 2011 – Jun. 2017 | Research / Teaching Assistant | University of Colorado Boulder, USA

Career breaks

- Parental leave | 4.1.2021 – 7.2.2021, 28.6.2021 – 25.7.2021, 1.8.2022 – 14.8.2022, 1.1.2023 – 22.1.2023, and 5.6.2023 – 13.8.2023 | **In total approximately 5.5 months.**

Research funding and grants

Received a total exceeding 350k€, all in the role of PI/main applicant.

- The Waldemar von Frenckell Foundation (2023) | 8 000€ | General research funding.
- Faculty of Science Support Funding (2022) | 5 000€ | Funding to promote the career development of young and promising researchers.
- Academy of Finland Postdoctoral Researcher (Sept. 2020 - Aug. 2023) | Approx. 250 000€.
- Ruth and Nils-Erik Stenbäck Foundation (2020) | 30 000€ | Funding for young researchers in the sciences.
- The Waldemar von Frenckell Foundation (2020) | 9 000€ | For the hiring of a summer trainee.
- The Swedish Cultural Foundation in Finland (2020) | 25 000€ (Declined due to overlapping funding received.)

- Ruth and Nils-Erik Stenbäck Foundation (2018) | 25 000€ | Funding for young researchers in the sciences.
- Graduate School Dissertation Completion Fellowship, University of Colorado Boulder (2016-2017) | Provided outstanding Ph.D. candidates with one semester of full financial support.
- Jan Kwiecinski Fellowship (2016), the Polish Institute of Nuclear Physics and the Polish Academy of Sciences. Provided funding for participation in the 56th Cracow School of Theoretical Physics.

Research output

A total of 14 publications, including 12 in peer-reviewed journals. The ten most important publications:

1. Henriksson, O., Hippeläinen, A., Hoyos, C., Jokela, N., Piispa, A., "Higgs phases at non-zero density from holography", JHEP 08 (2023) 186, [https://doi.org/10.1007/JHEP08\(2023\)186](https://doi.org/10.1007/JHEP08(2023)186).
2. Ulf Danielsson, Oscar Henriksson, Daniel Panizo, "Stringy realization of a small and positive cosmological constant in dark bubble cosmology", Phys. Rev. D 107, 026020 (2023), <https://doi.org/10.1103/PhysRevD.107.026020>.
3. Ares, F.R., Henriksson, O., Hindmarsh, M., Hoyos, C., Jokela, N., "Gravitational Waves at Strong Coupling from an Effective Action", Phys.Rev.Lett. 128 (2022) 13, 131101, <https://doi.org/10.1103/PhysRevLett.128.131101>.
4. Ares, F.R., Henriksson, O., Hindmarsh, M., Hoyos, C., Jokela, N., "Effective actions and bubble nucleation from holography", Phys.Rev.D 105 (2022) 6, 066020, <https://doi.org/10.1103/PhysRevD.105.066020>.
5. Henriksson, O., "Black brane evaporation through D-brane bubble nucleation", Phys.Rev.D 105 (2022) 4, L041901, <https://doi.org/10.1103/PhysRevD.105.L041901>.
6. Henriksson, O., Hoyos, C., Jokela, N., "Brane nucleation instabilities in non-AdS/non-CFT", JHEP 02 (2020) 007, [https://doi.org/10.1007/JHEP02\(2020\)007](https://doi.org/10.1007/JHEP02(2020)007).
7. Henriksson, O., Hoyos, C., Jokela, N., "Novel color superconducting phases of N=4 super Yang-Mills at strong coupling", JHEP 09 (2019) 088, [https://doi.org/10.1007/JHEP09\(2019\)088](https://doi.org/10.1007/JHEP09(2019)088).
8. Henriksson, O., Rosen, C., "'1kF' Singularities and Finite Density ABJM Theory at Strong Coupling", JHEP 07 (2017) 009, [https://doi.org/10.1007/JHEP07\(2017\)009](https://doi.org/10.1007/JHEP07(2017)009).
9. DeWolfe, O., Gubser, S., Henriksson, O., Rosen, C., "Gapped Fermions in Top-down Holographic Superconductors", Phys.Rev.D 95 (2017) 8, 086005, <https://doi.org/10.1103/PhysRevD.95.086005>.
10. DeWolfe, O., Henriksson, O., Rosen, C., "Fermi surface behavior in the ABJM M2-brane theory", Phys.Rev.D 91 (2015) 12, 126017, <https://doi.org/10.1103/PhysRevD.91.126017>.

In publications 1 and 5-7, the PI was responsible for all probe brane computations, as well as most of the numerical computations. In publications 3 and 4, the PI introduced the model studied and laid the groundwork for the computation of the effective action, which is the main result of the publications. In publication 2, the PI contributed with knowledge of bubble nucleation and of the specific system studied, together with some computations. In the remaining publications, the PI was responsible for carrying out most of the computations, both analytical and numerical. In all the publications listed, the PI participated in analyzing and writing up the results.

Research supervision and leadership experience

- Currently supervising two B.Sc. theses at Åbo Akademi U. and co-supervising one M.Sc. thesis at the U. of Helsinki.
- Supervised one B.Sc. thesis (O. Karhu, 2021) and co-supervisor of one M.Sc. thesis (A. Piispa, 2022) at the U. of Helsinki.
- Hired and/or supervised a total of six B.Sc. and M.Sc. students as summer trainees (2020–2023), U. of Helsinki.

Teaching merits

- **Main lecturer:**
 - Modern Physics Introductory Course, spring 2024, 5 cr, Åbo Akademi U., Finland.
 - Electronics and Circuit Analysis, fall 2023, 5 cr, Åbo Akademi U., Finland.
 - Introduction to Relativity Theory, spring 2019 – fall 2022 (six times in total), 5 cr, U. of Helsinki, Finland.
- **Teaching assistant:**
 - Mechanics Introductory Course, fall 2023, 5 cr, Åbo Akademi U., Finland.
 - String theory, fall 2018, 5 cr, University of Helsinki, Finland.
 - Various undergraduate and graduate courses, fall 2011 – spring 2016, University of Colorado Boulder, USA.
- **Pedagogical training:**
 - University Pedagogy 1: Learning in Higher Education, fall 2020, 5 cr, U. of Helsinki, Finland.
 - University Pedagogy 2.1: Constructive Alignment in Course Design, fall 2021, 5 cr, U. of Helsinki, Finland.
 - [Certificate in College Teaching](#), Center for Teaching & Learning, University of Colorado Boulder.

Other key scientific or academic merits

- **Scientific talks:** Approximately 20 talks at conferences, workshops, and scientific institutes (for more details see <https://blogs.helsinki.fi/oscarh/talks/>).
- **Journal referee:** Annals of Physics, European Physical Journal C, General Relativity and Gravitation, Journal of High Energy Physics, Physical Review D.
- **Event organizer:** Nordita workshop “Holography for Astrophysics and Cosmology”, Stockholm, Sweden (2022).
- **Course planning and coordination:** Secretary for “Studiekollegiet i fysik” (Group coordinating the Swedish-language teaching in physics at the University of Helsinki), Sept. 2020 – Dec. 2022.
- **Junior Faculty Club:** Treasurer and board member (Sept. 2019 – Aug. 2021). The JFC is a multidisciplinary mentoring and networking system for young researchers at the University of Helsinki Faculty of Science.
- **Doctoral student thesis committee member** (monitoring thesis progress and quality of the supervision of a PhD student), U. of Helsinki, Finland.

Scientific and societal impact

Appearances in media and podcast discussing own research and related physics:

- *Science podcast* 12.6.2022 "[Cup of Cosmology: Let's talk about holography!](#)"
- *Hufvudstadsbladet* 15.5.2022 (in Swedish): "[Bubblor på kollisionskurs...](#)"
- *Nya Åland* 14.5.2022 (in Swedish): "[Åländske Oscar forskar kring bubblor i universum](#)"
- *Ålands Radio* 19.4.2022 (in Swedish): "[Framtida detektorer ska observera gravitationsvågor](#)"