Quantum critical metals at vanishing fermion flavor number

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List of Publications

The thesis is based on the following publications:

[65] Balazs Meszena et al. "Nonperturbative emergence of non-Fermi-liquid behavior in $d = 2$ quantum critical metals". In: *Phys. Rev. B* 94 (11 Sept. 2016), p. 115134. URL: http://link.aps.org/doi/10.1103/PhysRevB.94.115134.

[66] Petter Säterskog, Balazs Meszena, and Koenraad Schalm. "Two-point function of a $d = 2$ quantum critical metal in the limit $k_F \to \infty$, $N_f \to 0$ with $N_f k_F$ fixed". In: *Phys. Rev. B* 96 (15 Oct. 2017), p. 155125. URL: https://link.aps.org/doi/10.1103/PhysRevB.96.155125.

[67] Petter Säterskog. "A Framework for Studying a Quantum Critical Metal in the Limit $N_f \to 0$". In: *To be submitted* (2017).

[68] Petter Säterskog. "Boson-Dominated Quantum Critical Metals at Lorentz Symmetry Point". In: *To be submitted* (2017).

Other publications by the author:

[152] Irina Arefeva et al. "Holographic dual of a time machine". In: *Phys. Rev. D* 94 (4 Aug. 2016), p. 044059. URL: https://link.aps.org/doi/10.1103/PhysRevD.94.044059.

Curriculum Vitæ

I was born the 8th of February 1989 in Gothenburg, Sweden.

In 2008 I started my studies at the bachelor's program "Physics Engineering" at Chalmers University in Gothenburg. I obtained my degree in 2011 and was admitted to the master's program "Physics and Astronomy" at the same university. The first year of this program was done as an exchange student at Hong Kong University of Science and Technology and the second year back in Gothenburg. I obtained my master's degree in 2013.

I was the same year hired as a Ph.D. student in the group of Koenraad Schalm at the Lorentz Institute at Leiden University in the Netherlands to conduct research on strongly coupled condensed matter systems using methods from high-energy physics. My work there resulted in this thesis.

During the fall of 2016 I presented my work at the "Applications of Gauge/Gravity Duality 2016" workshop at Chalmers University, at the Perimeter Institute, Harvard University, Stanford University and UC Berkeley.

From October 2017 I will be working as a postdoctoral researcher at the "Nordic Institute for Theoretical Physics" in Stockholm.

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Outside of the Lorenz Institute I express my gratitude to Ulf Gran at Chalmers University who was the advisor of my master's project. I thoroughly enjoyed the research we did together and this motivated me to pursue a Ph.D. in theoretical physics.

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