Deciphering fermionic matter: from holography to field theory

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List of Publications

The thesis is based on the following publications:

1. A. Bagrov, B. Meszena and K. Schalm, "Pairing induced superconductivity in holography," JHEP **1409** (2014) 106 [arXiv:1403.3699 [hep-th]].

2. B. Meszena, P. Säterskog, A. Bagrov and K. Schalm, "Non-perturbative emergence of non-Fermi liquid behaviour in $d = 2$ quantum critical metals," Phys. Rev. B **94** (2016), 115134, [arXiv:1602.05360 [cond-mat.str-el]].

3. B. Meszena, P. Säterskog, and K. Schalm, "Non-perturbative correlation functions of a $d = 2$ quantum critical metal", to appear

Other publications by the author are

4. B. Meszena and A. Patkos, "On the evolution of an entangled lepton-neutrino pair," Mod. Phys. Lett. A **26** (2011), 101 [arXiv:1009.5923 [hep-ph]].

Curriculum Vitæ

I was born on 31 March 1989 in Budapest, Hungary. I did my secondary education at Fazekas Mihaly high school which is a place with an exceptionally high density of future scientists and engineers.

In 2007 I started my university studies in Physics at the Eotvos Lorand University from where I received my Bachelor diploma in 2010. After this I continued my studies as a Master student in the particle physics track.

After graduation in 2012 I moved to the Netherlands to start my PhD research at the Lorentz Institute (Leiden University). I have become a member of the group of prof. Koenraad Schalm and prof. Jan Zaanen. I have conducted research at the interface between high- and low-energy physics. I was also a teaching assistant for the courses "'Effective field theory' and "Quantum field theory". During my PhD I have presented my work through talks and posters at several workshops and schools in the Netherlands, Greece, Hungary, Germany, China and Brazil.

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