Translational symmetry breaking in holographic strange metals

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To my wife and son.

Contents

Contents i

Foreword v

1. Theory of Condensed Matter 1
- 1.1. Drude Transport . . . 1
  - 1.1.1. Thermopower . . . 3
- 1.2. Beyond Classical Theory . . . 5
  - 1.2.1. A Better Electron Gas . . . 5
  - 1.2.2. Towards Field Theory . . . 7
- 1.3. (Broken) Symmetry . . . 8
  - 1.3.1. Noether's Theorem . . . 8
  - 1.3.2. Landau Theory and Symmetry Breaking . . . 8
  - 1.3.3. Continuous Spontaneous Symmetry Breaking . . . 10
- 1.4. Superconductivity . . . 11
  - 1.4.1. BCS Theory . . . 11
  - 1.4.2. Challenges in Superconductivity . . . 12
  - 1.4.3. Hole Doped Cuprates . . . 12
- 1.5. Strange Metals . . . 13
  - 1.5.1. Strong Coupling Issues and the Fermion Sign Problem . . . 15
- 1.6. New Territory . . . 17

2. AdS/CFT: The Holographic Duality 19
- 2.1. History of AdS/CFT . . . 19
  - 2.1.1. A More General Statement of the Duality . . . 19
  - 2.1.2. Limits of the Duality . . . 20
- 2.2. Renormalization Group and Geometry . . . 21
  - 2.2.1. Finite Temperature . . . 22
- 2.3. GPKW Dictionary . . . 23
  - 2.3.1. Fields and Scaling Dimensions . . . 23
  - 2.3.2. Black Hole Thermodynamics . . . 26
  - 2.3.3. Top-Down vs Bottom-Up . . . 27
- 2.4. Holographic Applications to Condensed Matter Physics . . . 27
  - 2.4.1. Hydrodynamics . . . 28
  - 2.4.2. Conductivities from Holography: Real-time Information . . . 29

2.5. Finite Density: The Reissner-Nordström Black Hole . . . 31
2.5.1. Scaling Properties of Reissner-Nordström . . . 32
2.5.2. Thermodynamics of Reissner-Nordström . . . 33
2.6. Einstein-Maxwell-Dilaton Theory . . . 35
2.6.1. The Gubser-Rocha Conformal-to-AdS2 Metal . . . 37
2.6.2. DC Conductivity in the Gubser-Rocha Model . . . 39
2.7. Breaking Translational Symmetry . . . 40

3. Numerical Holography and Lattices **41**
3.1. Spatial Modulation . . . 41
3.1.1. Bidirectional Lattices . . . 41
3.1.2. RN Lattice Model . . . 42
3.1.3. DeTurck Method . . . 44
3.1.4. Thermodynamics of the Lattices . . . 45
3.2. Solutions to the Unidirectional Lattice . . . 46
3.2.1. Numerical Convergence of Holographic Lattices . . . 47
3.2.2. Bidirectional Lattice . . . 48
3.3. Einstein-Maxwell-Dilaton lattices . . . 49
3.4. Computing Perturbations . . . 50
3.4.1. Optical Conductivities in the Homogeneous Reissner-Nordström Black Hole . . . 51
3.4.2. Finite Momentum Correlators . . . 53
3.4.3. Lattice Conductivities . . . 54
3.4.4. DC conductivities . . . 56
3.5. Outlook . . . 57

4. Holographic Lattice Fermions **59**
4.1. Attribution . . . 59
4.2. Introduction . . . 59
4.3. Umklapp Scattering and Fermi Pockets in Unidirectional Potential . . . 62
4.4. Holographic Fermi Surfaces and Zeros . . . 65
4.5. Fermionic Spectral Function in a Holographic Lattice . . . 71
4.6. Destruction of the Fermi Surface by the Zeros in the Green's Function . . . 73
4.6.1. Weak Lattice Potential . . . 73
4.6.2. Strong Lattice Potential . . . 77
4.7. Discussion . . . 80
4.A. Appendix A: Fermionic Equations of Motion in the RN Background . . . 85
4.B. Appendix B: Numerical Calculus and Precision Control for Gravity Background 86
4.C. Appendix C: Numerical Calculus for Dirac Equation . . . 87
4.D. Appendix D: Green's Function in the Bloch Momentum Representation . . . 89

5. Quantization of the Gubser-Rocha Model **93**
5.1. Attribution . . . 93
5.2. Introduction . . . 93

5.3. Setup . . . 94
5.4. Regularization, boundary terms and choice of quantization . . . 96
5.4.1. Boundary action . . . 96
5.4.2. Choice of quantization and thermodynamics . . . 99
5.5. Deformed Gubser-Rocha black holes . . . 103
5.5.1. Numerically constructed solutions . . . 103
5.5.2. The holographic dual of the one-parameter family of solutions in different quantization choices . . . 105
5.6. Conclusion . . . 108
5.7. Validity of the boundary action . . . 109
5.8. Matching of metric gauge choices . . . 111

6. Planckian Transport for a Holographic Local Quantum Critical Metal in Periodic Potentials 113
6.1. Attribution . . . 113
6.2. The Planckian Dissipation Mystery versus Computational Holography . . . 113
6.2.1. Main Observations and Summary of the Results . . . 115
6.3. Holographic Strange Metals, Transport and Translational Symmetry Breaking . 122
6.4. Umklapp Hydrodynamics for Weak Lattice Potentials . . . 125
6.5. The Applicability of Hydrodynamics and the Imprint of Local Quantum Criticality . . . 130
6.6. DC vs Optical conductivities in explicit lattice (holographic) strange metals from Umklapp . . . 133
6.6.1. Low Temperatures: Drude Transport . . . 134
6.6.2. Intermediate temperatures: a mid IR-peak in the optical response . . . 137
6.6.3. Intermediate Lattice Strength: Towards an Incoherent Metal . . . 138
6.6.4. On the Applicability of Umklapp Hydrodynamics . . . 140
6.7. Observations at Strong Lattice Potentials: Planckian Dissipation and Incoherent Metals . . . 140
6.7.1. The Remarkable Ubiquity of Planckian Dissipation . . . 140
6.7.2. An Incoherent Metal Explained with Microscopic Scrambling . . . 143
6.7.3. Saturating Behavior and Planckian Dissipation . . . 148
6.8. Discussion: Is it Relevant for Condensed Matter Physics? . . . 149
6.A. Appendix A: AdS RN and GR Black Holes . . . 153
6.A.1. Reissner-Nordström . . . 153
6.A.2. Einstein-Maxwell-Dilaton . . . 154
6.A.3. Lattice Backgrounds . . . 155
6.A.4. DC Conductivity . . . 156
6.B. Appendix B: Semi-local Criticality and an Induced IR Length Scale . . . 157
6.C. Appendix C: Four-Pole Fitting Formula . . . 160
6.D. Appendix D: Memory Matrix Formalism . . . 160
6.E. Appendix E: Scaling of Hydrodynamical Relaxation Rates . . . 160
6.F. Appendix F: Lorentz Oscillator Decoupling . . . 162

7. Conclusion **165**

List of Publications **167**

Bibliography **167**

Summary **187**

Samenvatting **189**

Curriculum Vitae **191**

Acknowledgements **193**

Foreword

In this thesis, I will discuss holographic strange metals and what happens in such a system when translational symmetry is broken. This thesis is split along the middle into two distinct parts. In chapters 1 through 3, I will give an overview of some of the theory and background as an introduction on the topic, as well as an opportunity to provide some clarity on the specific systems and conventions used. Chapters 4 through 6, comprise three papers on which I have been an author related to aspects of transport and linear response phenomena that can be computed numerically in holographic strange metals. Let the reader beware that due to the nature of the different projects, this means that some information might seem duplicated between these chapters and the introduction. This is mostly not the case, as progressive insights have refined and adapted our notations and conventions over the years, and these sections are therefore kept as explicit as possible for the sake of accuracy.