

## SCIENTIFIC PUBLICATIONS

## RESEARCH PAPERS IN PEER REVIEWED JOURNALS

- [1] J. Erdmenger, K. Ghoroku and R. Meyer, “Holographic (De)confinement Transitions in Cosmological Backgrounds,” *Phys. Rev. D* **84** 026004 (2011), [arXiv:1105.1776 \[hep-th\]](#).
- [2] C. Charmousis, B. Gouteraux, B. S. Kim, E. Kiritsis and R. Meyer, “Effective Holographic Theories for Low Temperature Condensed Matter Systems,” *JHEP* **1011** (2010) 151, [arXiv:1005.4690 \[hep-th\]](#) (54 INSPIRE citations).
- [3] M. Ammon, J. Erdmenger, R. Meyer, A. O’Bannon and T. Wrase, “Adding Flavor to AdS<sub>4</sub>/CFT<sub>3</sub>,” *JHEP* **0911** (2009) 125, [arXiv:0909.3845 \[hep-th\]](#) (12 INSPIRE citations).
- [4] M. Ammon, J. Erdmenger, S. Höhne, D. Lüst and R. Meyer, “Fayet-Iliopoulos Terms in AdS/CFT with Flavour,” *JHEP* **0807** (2008) 068, [arXiv:0805.1917 \[hep-th\]](#).
- [5] J. Erdmenger, R. Meyer and J. P. Shock, “AdS/CFT with Flavour in Electric and Magnetic Kalb-Ramond Fields,” *JHEP* **0712** (2007) 091, [arXiv:0709.1551 \[hep-th\]](#) (63 INSPIRE citations)
- [6] J. Erdmenger, R. Meyer and J. H. Park, “Spacetime emergence in the Robertson-Walker universe from a matrix model,” *Phys. Rev. Lett.* **98** (2007) 261301, [arXiv:0705.1586 \[hep-th\]](#).
- [7] D. Grumiller and R. Meyer, “Quantum dilaton gravity in two dimensions with fermionic matter,” *Class. Quant. Grav.* **23** (2006) 6435, [hep-th/0607030](#).

## PREPRINTS

- [8] W. -J. Li, R. Meyer, H. Zhang, “Holographic non-relativistic fermionic fixed point by the charged dilatonic black hole,” submitted to *JHEP*, [arXiv:1111.3783 \[hep-th\]](#).

## PROCEEDINGS CONTRIBUTIONS

- [9] B. Gouteraux, B. S. Kim and R. Meyer, “Charged Dilatonic Black Holes and their Transport Properties,” in *Proceedings of the XVIth European Workshop on String Theory, Madrid, Spain, June 14-18 2010, Fortschr. Phys.* **59**, 723 (2011) [arXiv:1102.4440 \[hep-th\]](#).
- [10] R. Meyer, B. Gouteraux and B. S. Kim, “Strange Metallic Behaviour and the Thermodynamics of Charged Dilatonic Black Holes,” in *Proceedings of the XVIth European Workshop on String Theory, Madrid, Spain, June 14-18 2010, Fortschr. Phys.* **59**, 741 (2011) [arXiv:1102.4433 \[hep-th\]](#).
- [11] L. Bergamin and R. Meyer, “Two-Dimensional Quantum Gravity with Boundary,” in *Proceedings of 4th Advanced Research Workshop: Gravity, Astrophysics, and Strings at the Black Sea, Kiten, Bourgas, Bulgaria, 10-16 Jun 2007*, [arXiv: 0711.3595 \[hep-th\]](#).
- [12] L. Bergamin, D. Grumiller, R. McNees and R. Meyer, “Black Hole Thermodynamics and Hamilton-Jacobi Counterterm,” *J. Phys. A* **41** (2008) 164068, [arXiv:0710.4140 \[hep-th\]](#).
- [13] R. Meyer, “Quantizing two-dimensional dilaton gravity with fermions: The Vienna way,” in *Proceedings of the 11th Marcel Grossmann Meeting on Recent Developments in Theoretical and Experimental General Relativity, Gravitation, and Relativistic Field Theories, Berlin, Germany, 23-29 Jul 2006*, [hep-th/0612288](#).
- [14] D. Grumiller and R. Meyer, “Ramifications of lineland,” *Turk. J. Phys.* **30** (2006) 349, [hep-th/0604049](#) (27 INSPIRE citations).
- [15] R. Meyer, “Constraints in two-dimensional dilaton gravity with fermions,” in *Proceedings of the International V.A. Fock School of Advances of Physics (IFSAP 2005), St. Petersburg, Russia, 21-27 Nov 2005*, [hep-th/0512267](#).

**BOOK CONTRIBUTIONS**

- [16] L. Bergamin and R. Meyer, “Wolfgang Kummer and the Vienna School of Dilaton (Super-)Gravity,” contribution to *”Fundamental Interactions - A Memorial Volume for Wolfgang Kummer”*, World Scientific 2009, [arXiv:0809.2245](https://arxiv.org/abs/0809.2245) [hep-th].

**THESES**

- [17] R. Meyer, “Holography in external fields and in time-dependent backgrounds,” *PhD thesis, Ludwig-Maximilians-Universität München, 2009*, <http://edoc.ub.uni-muenchen.de/10466/>.
- [18] R. Meyer, “Classical and quantum dilaton gravity in two dimensions with fermions,” *Diploma thesis, Universität Leipzig, 2006*, [gr-qc/0607062](https://arxiv.org/abs/gr-qc/0607062).

**INVITED SCIENTIFIC PRESENTATIONS****PRESENTATIONS AT CONFERENCES**

1. “*Holographic (De)confinement Transitions in Cosmological Backgrounds*”, 6th Crete Regional Meeting on String Theory, Adamas, Milos Island, Greece, Jun. 2011
2. “*Effective Holographic Theories for Condensed Matter Systems*”, Crete Conference On Gauge Theories And The Structure Of Spacetime, Kolymbari, Crete, Greece, Sep. 2010
3. “*Flavoured Holographic Duals of 3D Chern-Simons-Matter Theories*”, Fifth Aegean Summer School – From gravity to thermal gauge theories: The AdS/CFT correspondence, Adamas, Milos Island, Greece, Sep. 2009

**PRESENTATIONS AT WORKSHOPS, SCHOOLS AND PROGRAMS**

1. “*Applications of the generalized AdS/CFT correspondence to strongly correlated condensed matter systems*”, Workshop “Future directions of GRK 1523 Quantum and gravitational fields”, invited job interview presentation for a W1 junior professorship (equivalent to assistant professorship) at Jena U., Jena, Germany, Nov. 2011
2. “*Holographic (De)confinement Transitions in Cosmological Backgrounds*”, XVII European Workshop on String Theory 2011, Padua, Sep. 2011
3. “*Holography and Strange Metals*”, Workshop on Large-N Gauge Theories, Galileo Galilei Institute Florence, Apr. 2011
4. “*Effective Holographic Theories for Condensed Matter Systems*”, KITPC Program on AdS/CFT and Novel Approaches to Hadron and Heavy Ion Physics, Beijing, P. R. China, Oct. 2010
5. “*Effective Holographic Theories for Condensed Matter Systems*”, Program “AdS Holography and the Quark-Gluon Plasma”, Erwin-Schrödinger Institute, Vienna, Sep. 2010
6. “*Thermodynamics of Effective Holographic Theories for Condensed Matter Physics*”, XVIth European Workshop on String Theory, Madrid, Spain, Jun. 2010
7. “*The D3-D7 Model in Electric and Magnetic Fields*”, Recent Developments in String/M Theory, KIAS, Seoul, South Korea, Sep. 2008
8. “*Two-Dimensional Dilaton Gravity with Boundary*”, 7th Workshop on Quantization, Dualities and Integrable Systems, Eskisehir U., Eskisehir, Turkey, Apr. 2008
9. “*AdS/CFT with Flavour in Kalb-Ramond Fields*”, DESY theory workshop “QCD: String theory meets collider physics”, Hamburg, Sep. 2007
10. “*Heating AdS/CFT with Kalb-Ramond Field*”, “Gauge Fields and Strings” summer school, Isaac Newton Institute for Mathematical Sciences, Cambridge, UK, Sep. 2007
11. “*Spacetime Emergence in the Robertson-Walker Universe from a Matrix model*”, Program on Poisson Sigma Models, Lie Algebroids, Deformations, and Higher Analogues, Erwin-Schrödinger Institute, Vienna, Aug. 2007

**POSTER PRESENTATION**

1. “*Adding Flavor to AdS<sub>4</sub>/CFT<sub>3</sub>*”, Poster presented at the IPMU Focus Week “Condensed Matter Physics Meets High Energy Physics”, IPMU, Tokyo, Japan, Feb. 2010

2. “*Space-Time Emergence at the Big Bang from a Matrix Model*”, Poster presented at the IMPRS “Elementary Particle Physics” evaluation workshop, Max-Planck Institute for Physics, Munich, Dec. 2009

### SEMINAR TALKS

1. “*Parity Breaking Hydrodynamics in 2+1 Dimensions and Axions in AdS*”, Max-Planck Institute for Physics, Munich, Germany, Nov. 2011
2. “*Effective Holographic Theories for Condensed Matter Systems*”, Pusan National University, Pusan, South Korea, Dec. 2010
3. “*Effective Holographic Theories for Condensed Matter Systems*”, Sogang U., Seoul, South Korea, Nov. 2010
4. “*Spacetime Emergence in the Robertson-Walker Universe from a Matrix model*”, Dublin Institute for Advanced Study, Dublin, Ireland, Aug. 2009
5. “*Adding Flavour to AdS<sub>4</sub>/CFT<sub>3</sub>*”, Santiago de Compostela U., Spain, Jun. 2009
6. “*Two-Dimensional Dilaton Gravity with Boundary*”, Sogang U., Seoul, South Korea, Sep. 2008
7. “*Two Uses of Kalb-Ramond Fields in AdS/CFT with Flavour*”, Stanford U., USA, Sep. 2008
8. “*Fayet-Iliopoulos Terms in AdS/CFT with Flavour*”, University of Southern California, Los Angeles, USA, Sep. 2008
9. “*Two Uses of Kalb-Ramond Fields in AdS/CFT with Flavour*”, UCLA, Los Angeles, USA, Sep. 2008
10. “*Two Uses of  $B_{\mu\nu}$  in AdS/CFT with Flavour*”, Perimeter Institute, Waterloo, Canada, Sep. 2008
11. “*Two Uses of  $B_{\mu\nu}$  in AdS/CFT with Flavour*”, Enrico Fermi Institute, Chicago U., USA, Sep. 2008
12. “*Spacetime Emergence in the Robertson-Walker Universe from a Matrix model*”, U. of Kentucky, Lexington, USA, Sep. 2008
13. “*Two Uses of  $B_{\mu\nu}$  in AdS/CFT with Flavour*”, U. of Pennsylvania, Philadelphia, USA, Sep. 2008
14. “*Spacetime Emergence in the Robertson-Walker Universe from a Matrix model*”, Vienna U. of Technology, Austria, Aug. 2007
15. “*Spacetime Emergence in the Robertson-Walker Universe from a Matrix model*”, Institute for Theoretical Physics, Chinese Academy of Sciences, Beijing, P. R. China, Mar. 2007
16. “*Quantum dilaton gravity in two dimensions with fermionic matter*”, Vienna U. of Technology, Austria, Oct. 2005

### INVITED LECTURES

1. “Holography and Strange Metals”, Center for Advanced Mathematical Sciences, American University Beirut, Lebanon, Mar. 2011
2. “Flavoured Holographic Duals of Three-Dimensional Chern-Simons-Matter Theories”, Pusan National U., Pusan, South Korea, Mar. 2010

3. “The D3-D7 Model of AdS/CFT with Flavour”, Center for High Energy Physics of Peking U., P. R. China, Jan. 2010
4. “The D3-D7 Model of AdS/CFT with Flavour”, Nankai U., Tianjin, P. R. China, Jan. 2010
5. “Flavoured Holographic Duals of Three-Dimensional Chern-Simons-Matter Theories”, Crete Center for Theoretical Physics, Heraklion, Oct. 2009
6. “The D3-D7 Model of AdS/CFT with Flavour”, Vienna U. of Technology, Nov. 2008
7. “Dilaton Gravity Theories in Two Dimensions”, Advanced Summer School on Modern Mathematical Physics, Dubna, Russia, Sep. 2006