

Final report on The Holographic Way Conference held at NORDITA October 15-18, 2012:

Number of participants: 47

The conference lasted four days with 5-6 talks per day by renowned experts in the field.

Scientific topics

AdS/CMT, AdS/QCD, black-hole complementarity and firewalls, higher-spin holography, instabilities, black-hole microstate counting entanglement entropy, integrability, fluid-gravity correspondence.

Scientific impact

The gathering of experts in this forefront research area has had considerable impact at various levels. The workshop enabled dissemination of some of the most recent and advanced progress in this area to other researchers in the field, and at the same time managed to highlight and outline some the most promising and challenging research directions of the future. There was a very lively and interactive atmosphere during the presentations, as well as in the free discussion time. In addition, new collaborations were started and already numerous papers have appeared on the arxiv (hep-th) acknowledging the input and inspiration from the workshop. We also mention especially the two panel discussions which were held during the conference, and which were recorded and put on YouTube. The first one was on the “Firewall proposal” (by now almost 500 views), which was a lively discussion with representatives and experts in a variety of competing proposals. The second one was on “Ten years after eta over s” (by now over 100 views), in which the past successes and future challenges and worthwhile open directions of applied holography were discussed in detail.

Detailed program is included as appendix.

Monday 15 October 2012

FA32 09:30-10:15 Speaker: Prof. KIRITSIS, Elias

Holographic models for QCD in the Veneziano Limit

FA32 10:15-10:45 - 30 min break/Registration for conference

FA32 10:45-11:30 Speaker: Prof. TONG, David

Holographic dual of the lowest Landau level

FA32 11:30-11:45 - 15 min break

FA32 11:45-12:30 Speaker: Prof. KACHRU, Shamit

Towards a taxonomy of extremal black brane horizons

Albanova 12:30-14:00 - Lunch

FA32 14:00-14:45 Speaker: Prof. LIU, Hong

Renormalized entanglement entropy and the number of degrees of freedom

Lecture hall E1 15:15-16:15 Speaker: Prof. MALDACENA, Juan

Oskar Klein Memorial Lecture: Quantum Chromodynamics, strings and black holes

Tuesday 16 October 2012

FD5 09:30-10:15 Speaker: Prof. MAROLF, Don

Complementarity vs. Firewalls: Are there surprising quantum effects at black hole horizons?

FD5 10:15-10:45 - 30 min break

FD5 10:45-11:30 Speaker: Prof. KRAUS, Per

Probing higher spin black holes

FD5 11:30-11:45 - 15 min break

FD5 11:45-12:30 Speaker: Prof. MALDACENA, Juan

TBA

Albanova 12:30-14:00 - Lunch

FD5 14:00-14:45 Speaker: Dr. MONTEIRO, Ricardo

Hairy black holes and solitons in global AdS

FD5 14:45-15:00 - 15 min break

FD5 15:00-15:45 Speaker: Prof. VANDOREN, Stefan

Lifshitz holography for undoped Weyl semimetals

FD5 15:45-16:15 - 30 min break

FD5 16:15-17:30 Speakers: LARSEN (CHAIRMAN), Finn; GIDDINGS, Steve; MAROLF, Don; THORLACIUS, Larus

Panel discussion: Black hole firewalls, correspondence principle, holography and information paradox

Wednesday 17 October 2012

FD5 09:30-10:15 Speaker: Prof. ERDMENGER, Johanna

Universality or non-universality within gauge/gravity duality

FD5 10:15-10:45 - 30 min break

FD5 10:45-11:30 Speaker: Prof. MCGREEVY, John

Construction of quantum electron stars

FD5 11:30-11:45 - 15 min break

FD5 11:45-12:30 Speaker: Prof. BERTOLINI, Matteo

A holographic approach to general gauge mediation -

Albanova 12:30-14:00 - Lunch

FD5 14:00-14:45 Speaker: Prof. EMPARAN, Roberto

Black brane fluid flows

FD5 14:45-15:00 - 15 min break

FD5 15:00-15:45 Speaker: Prof. SEMENOFF, Gordon

TBA

FD5 15:45-16:15 - 30 min break

FD5 16:15-17:30 Speakers: KIRITSIS (CHAIRMAN), Elias; KACHRU, Shamit; LIU, Hong; TONG, David

Panel discussion: Ten years after eta/s: accomplishments of applied AdS/CFT

Kvarnen restaurant 19:00 - The Holographic Way Conference Dinner

Thursday 18 October 2012

D3 10:00-10:45 Speaker: Dr. CASTRO, Alejandra

The wave function of quantum de Sitter

D3 10:45-11:15 - 30 min break

D3 11:15-12:00 Speaker: Prof. SIMON, Joan

Remarks on 3d flat cosmological horizon holographic descriptions

Albanova 12:30-14:00 - Lunch

FB42 14:00-14:45 Speaker: Prof. GIDDINGS, Steve

TBA

FB42 14:45-15:00 - 15 min break

FB42 15:00-15:45 Speaker: Prof. SEN, Ashoke

Black hole bound state metamorphosis

FB42 15:45-16:15 - 30 min break

FB42 16:15-17:00 Speaker: Prof. LARSEN, Finn

Quantization and the black hole horizons