

Poster Session Program (Alphabetical order)

1. Chernicoff, Mariano,

Quarkonium dissociation by anisotropy,

"We compute the screening length for quarkonium mesons moving through an anisotropic, strongly coupled N=4 super Yang-Mills plasma by means of its gravity dual. For generic motion we find that: (i) mesons dissociate above a certain critical value of the anisotropy, even at zero temperature/ (ii) there is a limiting velocity for mesons in the plasma, even at zero temperature/ (iii) in the ultra-relativistic limit the screening length scales as $(1 - v^2)^{1/2}$, in contrast with the isotropic result $(1 - v^2)^{1/4}$. "

2. Dai, Shou-Huang,

Spiky and Rotating Strings in Rotating Rindler-AdS Space,

"We will provide spiky string and rotating string solutions in the rotating Rindler-AdS space and rotating global AdS vacua, and demonstrate how the deformations to AdS space due to the rota-boost transformations modify those solutions."

3. Enari, Takayuki,

On gravity dual for a correlation function of a Wilson loop and a chiral primary operator,

"In the context of AdS/CFT correspondence, we construct a gravity solution which corresponds to a correlation function between a 1/4 BPS Wilson loop and a chiral primary operator. We confirm that this solution preserves 1/8 supersymmetry. This agrees with gauge theory side. Next, we see that this solution reproduces behavior of the gauge theory correlation function in the large R-charge limit, which is derived from saddle point analysis of an integral representation for modified Bessel function. Moreover, we find another solution that becomes complex in a certain section. This can be interpreted, in gauge theory side, as a saddle point which does not exist on the steepest decent path. We see that each solution reduces to previously known stable and unstable string configuration respectively in the zero R-charge limit. This poster is based on Phys. Rev. D86, 106004 (2012)."

4. Harish, Potti,

Correspondance between Quantum Gravity and Holography,

"Holography relates a quantum theory of gravity in certain space times known as anti de Sitter spaces, to an ordinary quantum field theory in one less dimensions. In My poster I will present how such correspondences are discovered and how they are tested, giving special emphasis to testing those aspects which are sensitive to the quantum effects of gravity."

5. Honda,Masazumi,

Planar physics in the instanton sector,

"We claim the large- N limit is a useful tool to study the instantons: although the instanton effects are exponentially suppressed in the 't Hooft limit, another large- N limit, in which g^2 is fixed and hence the instanton contributions remain finite, inherits essential features of the 't Hooft limit, and the instanton effects at fixed g^2 can be read off from the 't Hooft limit. We demonstrate it for a class of $\mathcal{N} = 2$ supersymmetric gauge theories, by using the Nekrasov partition functions. "

6. Hotta,Masahiro,

Black Hole Firewalls Require Huge Energy of Measurement,

We will discuss a possible scenario for the firewall paradox resolution by using an exotic aspect of quantum field entanglement.

7. Irie,Hirohata,

Duality Constraints on String Theory,

"We study an implication of p-q duality (i.e. T-duality and/or spectral duality) on non-perturbative completion of (p,q) minimal string theory. As a result, we argue that the p-q duality even provides a constraint on non-perturbative (or contour) ambiguity possessed by matrix models. In particular, it prohibits some of meta-stability caused by ghost D-instantons, since the description on the dual side otherwise introduces an irregular contour in matrix models. "

8. Ishihara,Masafumi,

Tensor Network and Black Hole,

"A tensor network formalism of thermofield dynamics is introduced. The formalism relates the original Hilbert space with its tilde space by a product of two copies of a tensor network. Then, their interface becomes an event horizon, and the logarithm of the tensor rank corresponds to the black hole entropy. Eventually, multiscale entanglement renormalization anzats

(MERA) reproduces an AdS black hole at finite temperature. Our finding shows rich functionalities of MERA as efficient graphical representation of AdS/CFT correspondence.”

9. Ishii,Takaaki,

Impurity effect in a holographic superconductor ,

”We consider a holographic superconductor where a massive gauge field is introduced as the effect of homogeneous impurities. We show that the condensation of the massive gauge field is induced in the superconducting phase, and as a result the mass gap in the optical conductivity disappears.”

10. Isono,Hiroshi,

On classical solutions of multiple M5-branes,

We consider classical solutions and their interpretations of recently proposed action for multiple M5-branes.

11. Jeon,Imtak,

Unification of type IIA and IIB supergravities,

”To the full order in fermions, we construct $D = 10$ type II supersymmetric double field theory. We spell the precise $N = 2$ supersymmetry transformation rules as for 32 supercharges. The constructed action unifies type IIA and IIB supergravities in a manifestly covariant manner with respect to $O(10,10)$ T-duality and a pair of local Lorentz groups, or $Spin(1, 9) \times Spin(9, 1)$, besides the usual general covariance of supergravities or the generalized diffeomorphism. While the theory is unique, the solutions are twofold. Type IIA and IIB supergravities are identified as two different types of solutions rather than two different theories.”

12. Katsuragawa,Taishi,

”Noether current from surface term, Virasoro algebra and black hole entropy in bigravity”,

”The bigravity is non-linear massive gravity which has ghost-free construction with the dynamical metric. This gravity model is called bigravity or bimetric gravity because the model contains two metrics $g_{\mu\nu}$, $f_{\mu\nu}$ and massive spin-2 field appears in addition to massless spin-2 field corresponding to the graviton. Therefore, by considering the black holes in bigravity, we can evaluate how the massive spin-2 field near horizon affects the black hole entropy. We consider the static, spherically symmetric black hole solutions

in bigravity theory for minimal model with a condition $f_{\mu\nu} = C^2 g_{\mu\nu}$ and evaluate the entropy for black holes. In this condition, we show that there exists the Schwarzschild solution for $C^2 = 1$, which is unique consistent solution. We examine how the massive spin-2 field contributes and affects to the Bekenstein-Hawking entropy corresponding to Einstein gravity. In order to obtain the black hole entropy, we use a recently proposed approach which use Virasoro algebra and central charge corresponding to surface term in the gravitational action. As a result, we find that the obtained entropy has a double portion of the Bekenstein-Hawking entropy in the Einstein gravity.”

13. Kawaguchi, Io,

Classical integrable structure of Schrodinger sigma models,

”We discuss the classical integrable structure of two-dimensional non-linear sigma models defined on the three-dimensional Schrodinger spacetimes. The Schrodinger spacetimes are regarded as null-deformations of AdS3. The AdS3 isometry $SL(2,R)L \times SL(2,R)R$ is broken to $SL(2,R)L \times U(1)R$ due to the deformation. According to this symmetry, there are two descriptions to describe the classical dynamics of this model, 1) the description based on $SL(2,R)L$ and 2) the description based on $U(1)R$. In the former 1), we show Yangian symmetry is realized by improving the $SL(2,R)L$ Noether current to satisfy the flatness condition. Furthermore, Lax pairs can be constructed with the improved currents. In the later 2), we find non-local $SL(2,R)$ currents which satisfy the flatness condition. The currents enable us to show that other Yangian symmetries are realized in a non-trivial way in this model.

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14. Kawamoto, Shoichi,

Emission spectrum of soft massless states from heavy superstring,

We calculate emission rates of various bosonic/fermionic soft massless states of open/closed superstring from an ensemble of a highly excited open/closed superstring in the flat background. The resulting spectrum shows thermal distributions at the Hagedorn temperature. We find greybody factors for each process and observe their relation to the ones from blackholes.

15. Keita, Nii,

ABJ Wilson loop,

We exactly calculate the Wilson loop in ABJ theory and investigate the Seiberg duality of the Wilson loop.

16. Kim,Sung-Soo,

5-dim Superconformal Index and global symmetry enhancements,

The five-dimensional $N=1$ supersymmetric gauge theory with $Sp(N)$ gauge group and $SO(2n)$ flavor symmetry describes the physics on N D4-branes with n D8-branes on top of a single O8 orientifold plane in Type I' theory. This theory is known to be superconformal at the strong coupling limit with the enhanced global symmetry $E_{(n+1)}$. We calculate the superconformal index on S^1XS^4 for the $Sp(1)$ gauge theory and confirm such enhancement of the global symmetry at the superconformal limit for $n < 6$ to a few leading orders in the chemical potential.

17. Kim,Sang-Woo,

Cosmology from Lorentzian IIB matrix model,

"Based on our recent finding that (3+1)d spacetime emerges in the Lorentzian IIB matrix model, we continue our study to understand late behavior and cosmological properties. The expansion of 3d space is studied more carefully with a deformation to overcome a difficulty when we simulate a huge expansion numerically. We report our recent results on the deviation from the exponential growth after some time from SSB."

18. Kimura,Tetsuji,

Gauged Linear Sigma Model for Exotic Five-brane,

"We study the $N=(4,4)$ supersymmetric gauged linear sigma model which gives rise to the nonlinear sigma model for the multi-centered KK-monopoles. We find the new T-duality transformation of the model even in the presence of F-terms. Performing the T-duality, we find the gauged linear sigma model whose IR limit describes the exotic 522-brane with B-field. "

19. Komatsu,Shota,

Holographic three point functions for strings in AdS_2xS^3 ,

"We describe how to compute three point functions for classical strings in AdS_2xS^3 subspace of AdS_5xS^5 , which are believed to be dual to correlation functions in $SU(2)$ -sector of $N=4$ SYM. "

20. Kuwakino,Shogo,

Three Generation Models in Heterotic Asymmetric Orbifolds,

"We consider asymmetric orbifold construction of heterotic string theory. For Z_3 model building, we classify (22,6)-dimensional Narain lattices with

right-moving non-Abelian group factors by utilizing the lattice engineering technique. Gauge symmetry breaking patterns of models are analyzed. We also show some SUSY models with three generations. ”

21. Lee,Seung-Joo,

Wall-Crossing and Quiver Invariants,

”In study of four-dimensional BPS states, quiver quantum mechanics plays a central role. The Coulomb phases capture the multi-centered nature of such states, and are well understood in the context of wall-crossing. The Higgs phases are given typically by F-term-induced complete intersections in the ambient D-term-induced toric varieties, and the ground states can be far more numerous than the Coulomb phase counterparts. We observe that the Higgs phase BPS states are naturally and geometrically grouped into two parts, with one part given by the pulled-back cohomology from the D-term-induced ambient space. We propose that these pulled-back states are in one-to-one correspondence with the Coulomb phase states. This also leads us to conjecture that the index associated with the rest, intrinsic to the Higgs phase, is a fundamental invariant of quivers, independent of branches. For simple circular quivers, these intrinsic Higgs states belong to the middle cohomology and thus are all angular momentum singlets, supporting the single-center black hole interpretation.”

22. canceled

23. Ma,Chen-Te,

Effective Action for Dp-Brane in Large RR (p-1)-Form Background,

We construct the low energy effective action for the bosonic sector on a Dp-brane in large constant RR (p-1)-form field background. The action is invariant under both U(1) gauge symmetry and the volume-preserving diffeomorphism characterizing the RR-field background. Scalar fields representing transverse coordinates of the Dp-brane are included. It also respects T-duality and is consistent with the action for M5-brane in C-field background.

24. Kim, Hee yeon

D-brane Anomaly Inflow Revisited

25. Matsumiya,Nariaki,

5D SYM and 2D q-Deformed YM,

"We study the AGT-like conjectured relation of a four-dimensional gauge theory on $S^3 \times S^1$ to a two-dimensional q-deformed Yang Mills theory on a Riemann surface Σ by using a five-dimensional N=2 supersymmetric Yang Mills theory on $S^3 \times \Sigma$. It is thought that the six-dimensional N=(2,0) theory on $S^3 \times S^1 \times \Sigma$ underlies behind the relation, but the six-dimensional N=(2,0) theory has no Lagrangian descriptions. It has been argued that a five-dimensional N=2 theory yields the six-dimensional N=(2,0) theory on S^1 . We carried out the localization procedure in the five-dimensional theory to seek the relation of it with the two-dimensional q-deformed Yang Mills theory on Σ . Our results are in agreement with both of the conjectures. "

26. Miwa, Akitsugu,

On brane recombination in the ABJM model,

"Recombination of intersecting D-branes is caused by tachyonic modes localized on an intersecting point. Hashimoto and Nagaoka studied its dynamics by using the super Yang-Mills theory in the paper JHEP 0306(2003)034. On the other hand, the recombination of M2-branes is not well studied before. In this poster we discuss the recombination of M/D-branes based on the ABJM model by applying the method similar to the one used by Hashimoto and Nagaoka. "

27. Morita, Takeshi,

Thermodynamics of black M-branes from SCFTs,

"We discuss thermodynamics of N M2-branes at strong coupling from the ABJM theory by employing the Smilga-Wiseman method. As a result we obtain the free energy of the ABJM theory $N^{3/2}k^{1/2}T^3$, which is consistent with the prediction from the eleven-dimensional supergravity. We also estimate the free energy of N M5-branes by assuming some natural properties of the 6d superconformal field theory. Remarkably we obtain the free energy N^3T^6 , which is consistent again with the supergravity prediction."

28. Moriyama, Sanefumi,

Captain Hook and the Pirates,

"We have studied VEVs of the half BPS Wilson loops in the ABJM theory. Especially, we have found that Wilson loop VEV in any representation can be expressed in terms of those in the hook representations."

29. Nagasaki, Koichi,

Bubbling Probe D5-brane,

"We consider a bound state of D5 and D1 branes in $AdS_5 \times S^5$ spacetime. This corresponds to a 't Hooft operator on a interface in $N=4$ super Yang-Mills theory by the AdS/CFT correspondence. Consequently, we derive a set of differential equations which is the sufficient and necessary condition for realizing the $1/4$ SUSY."

30. Nakamura,Shin,

Nonequilibrium Phase Transitions from AdS/CFT,

Nonequilibrium phase transitions that occur only at far from equilibrium are explored by using AdS/CFT. [Ref. S.N. PRL109(2012)120602]

31. Noriaki,Ogawa,

TBA,

TBA

32. Nozaki,Masahiro,

Holographic Local Quenches and Entanglement Density,

"We proposed a new holographic model of local quench. In this model, local quenches are triggered by local excitations in a given system. We probed the time dependent behavior of holographic entanglement entropy. And we confirm a logarithmic time-evolution, which is known to be typical in two dimensional local quenches. In our talk, we describe this model and the results we got by using it. And to study the structure of general quantum systems, we introduced a new quantity and apply this to analysis to quantum quenches. This quantity is called "entanglement density". We also describe properties of this quantity. This talk is based on arXiv:1302.5703 [hep-th]."

33. Nozawa,Masato,

Supersymmetric Plebanski-Demianski solution ,

We derive the necessary and sufficient conditions under which the general Plebanski-Demianski (PD) solution of Einstein-Maxwell theory with a negative cosmological constant admits Killing spinors.

34. Pandey,Kumar Priyabrat,

"Discrete torsion, de Sitter tunneling vacua and AdS brane: $U(1)$ gauge theory on D4-brane and an effective curvature",

”The $U(1)$ gauge dynamics on a D4-brane is revisited, with a two form, to construct an effective curvature theory in a second order formalism. We exploit the local degrees in a two form, and modify its dynamics in a gauge invariant way, to incorporate a non-perturbative metric fluctuation in an effective D4-brane. Interestingly, the near horizon D4-brane is shown to describe an asymptotic Anti de Sitter (AdS) in a semi-classical regime. Using Weyl scaling(s), we obtain the emergent rotating geometries leading to primordial de Sitter (dS) and AdS vacua in a quantum regime. Under a discrete transformation, we re-arrange the mixed dS patches to describe a Schwarzschild-like dS (SdS) and a topological-like dS (TdS) black holes. We analyze SdS vacuum for Hawking radiations to arrive at Nariai geometry, where a discrete torsion forms a condensate. We perform thermal analysis to identify Nariai vacuum with a TdS. Investigation reveals an AdS patch within a thermal dS brane, which may provide a clue to unfold dS/CFT. In addition, the role of dark energy, sourced by a discrete torsion, in the dS vacua is investigated using Painleve geometries. It is argued that a D-instanton pair is created by a discrete torsion, with a Big Bang/Crunch, at the past horizon in a pure dS. Nucleation, of brane/anti-brane pair(s), is qualitatively analyzed to construct an effective space-time on a D4-brane and its anti brane. Analysis re-assures the significant role played by a non-zero mode, of NS-NS two form, to generalize the notion of branes within a brane.

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35. Patrushev, Alexander,

Squashed cones and surface contributions to entanglement entropy ,

”We generalize the regularization procedure for the analysis of the Riemann geometry of manifolds with conical singularities for the case of squashed cones. In this case there is no rotational $O(2)$ symmetry in the subspace orthogonal to the singular surface. Contrary to the usual cones, when such a symmetry is present, the distributional nature of the conical singularities starts to depend essentially on the extrinsic geometry of the singular surface. There exist only two possible combinations quadratic in the extrinsic curvature. In order to fix the corresponding coefficients we work in flat spacetime and compute the quadratic curvature invariants in two special cases: when the singular surface is cylinder and when it is a sphere. Our results then allow to determine the contribution of extrinsic curvature for integral of any quadratic combination of the Riemann curvature. In particular, for the Euler number and the square of the Weyl tensor we get the results which are in

complete agreement with an earlier (partially based on holography) analysis of entanglement entropy of a 4d CFT. We generalize this result for the entropy of any, not necessarily conformal, field theory in four dimensions. We make remarks on possible extensions of our result to higher dimensions.”

36. Perz, Jan,

Systematic construction of black hole solutions in N=2 supergravity,

”Using an extension of Denef’s formalism or the H-FGK approach, the effective action for black holes in four- and five-dimensional N=2 supergravity coupled to vector multiplets can be rewritten in terms of suitably chosen variables (functions of the warp factor and the physical scalars) that have the same duality transformation properties as the electric and magnetic charges. Apart from simplifying the equations of motion, this makes the solutions for a given model take the same universal form, independently of supersymmetry or extremality, allowing both extremal and non-extremal black holes to be constructed systematically, including in particular analytic solutions in a supergravity model with a quantum correction to the prepotential.”

37. canceled

38. canceled

39. Sakatani, Yuho,

Master equation for Unruh-DeWitt detector and the universal relaxation time in de Sitter space,

”The Bunch-Davies vacuum is the instantaneous ground state of a scalar field at the infinite past in the Poincare patch of de Sitter space. The Unruh-DeWitt detector interacting with a scalar field in the Bunch-Davies vacuum is known to respond as if it is in a thermal bath. We consider a case where the scalar field is in the instantaneous ground state at a finite time (not at the infinite past), and show that the density matrix of the Unruh-DeWitt detector relaxes to the Gibbs distribution associated with the Bunch-Davies vacuum. Here, the relaxation time is shown to be a half of the de Sitter radius and does not depend on detailed properties of the detector.”

40. Sato, Yuki,

2d CDT is 2d Horava-Lifshitz quantum gravity,

” “ Causal Dynamical Triangulations ” (CDT) is a lattice theory where

aspects of quantum gravity can be studied. Two-dimensional CDT can be solved analytically and the continuum (quantum) Hamiltonian obtained. I will show that this continuum Hamiltonian is exactly the one obtained by quantizing two-dimensional projectable Horava-Lifshitz gravity. This poster is based on the work with J. Ambjørn, L. Glaser and Y. Watabiki.”

41. Sato,Yoshiki,

Quark-Antiquark Potential in Holographic Schwinger Effect,

”We analyze electrostatic potentials in the holographic Schwinger effect. The potential barrier for the pair production is estimated by a static potential consisting of static mass energies, an electric potential from an external electric field, and the Coulomb potential between a particle and an antiparticle. Given that the Coulomb potential is supposed to be evaluated by the minimal surface attaching on the conformal boundary as usual, the critical field, where the potential barrier vanishes, exhibits a slight deviation from the one obtained from the DBI action. We reconsider this issue by reexamining the Coulomb potential part, which is evaluated by the classical action of a string solution attaching on a probe D3-brane sitting at an intermediate position in the bulk AdS. Then the resulting critical field completely agrees with the DBI result. This agreement gives rise to a strong support for the holographic scenario. We also discuss the finite-temperature case and the temperature dependence of the critical field also agrees with the DBI result.”

42. canceled

43. Shimasaki,Shinji,

Exact results of theories with $SU(2|4)$ symmetry and the gauge/gravity correspondence,

”We study the theories with $SU(2|4)$ symmetry which consist of the plane wave matrix model (PWMM), super Yang-Mills theory (SYM) on RxS^2 and SYM on RxS^3/Z_k . The last two theories can be realized as theories around particular vacua in PWMM, through the commutative limit of fuzzy sphere and Taylor’s T-duality. We apply the localization method to PWMM to reduce the partition function and the expectation values of a class of supersymmetric operators to matrix integrals. By taking the commutative limit and performing the T-duality, we then obtain the matrix integrals for SYM on RxS^2 and SYM on RxS^3/Z_k . We also discuss some applications of our

results to the gauge/gravity correspondence and the little string theory on RxS^5 .”

44. Shutaro,Kobayashi,

Gauge symmetry breaking in a non-supersymmetric D-brane model,

”I investigated a model which is constructed by four D3-branes and three anti-D7-branes at the Z_3 singularity. This model has no supersymmetry and describes a $U(2) \times U(1) \times U(1) \times U(3)$ gauge theory. I obtained the effective potential, which is described by the massless scalar modes of open strings on D-branes, using superstring world-sheet technique. I found a direction which break to $U(1) \times U(1)$ symmetry, even if one add the effect with twisted closed string. Moreover I investigated the geometrical aspect after the symmetry breaking. Also the effects of one-loop open string masses was discussed. This reserch was done together with Mr.Noriaki Kitazawa (Tokyo Metropolitan University).”

45. canceled

46. Stoica,Bogdan,

Spontaneous Generation of Angular Momentum in Holographic Theories,

”We present a new mechanism for generating angular momentum for AdS_4/CFT_3 theories in the presence of a gravitational Chern-Simons term in the bulk. A similar phenomenon is found for theories with bulk axionic coupling to the gauge field. We apply our mechanism to a certain class of black hole solutions and compare the resulting angular momentum density with the Hall viscosity obtained for the same configuration. Finally, we discuss the interpretation of angular momentum generation from the point of view of the boundary CFT_3 .”

47. Sugishita,Sotaro,

On propagators in de Sitter space,

”In a spacetime with no global timelike Killing vector, such as de Sitter space, we do not have a natural choice for the vacuum state of matter fields since the Hamiltonian has explicit time dependence. We consider a free scalar fields in de Sitter space, and choose the vacuum state at each moment as the instantaneous ground state of the Hamiltonian. We develop a method for calculating wave functions associated with the vacuum and the corresponding propagators. We discuss properties of the propagators.”

48. Takimi,Tomohisa,
Phase structure of the Chern-Simons matter theories,
TBA

49. Tanahashi,Norihiro,
Horizon instability of an extreme Reissner-Nordstrom black hole,
"Recently, a novel instability was found for a massless scalar field on an extreme Reissner-Nordstrom black hole. This instability is due to purely classical effect, and it makes a part of energy-momentum tensor of the scalar field discontinuous on the horizon at late time. We show that a similar instability occurs also for a massive scalar field and for coupled linearized gravitational and electromagnetic perturbations. These instabilities are intimately related to conserved quantities constructed from perturbative fields. We analytically show the existence of instability based on these quantities when possible, and also conduct numerical analysis to examine more general cases. We discuss the physical mechanism and implications of this instability, and also argue the final fate of the system after nonlinear effects set in."

50. Tomino,Dan,
Renormalization group approach to Yang-Mills type two matrix models,
We use large-N matrix renormalization group approach formulated by Brezin and Zinn-Justin to detect (i) critical behavior (of model with mass terms) and (ii) mass terms generation (of model without mass terms).

51. Ugajin,Tomonori,
An entropy formula for higher spin black holes via conical singularities,
"We consider the entropy of higher spin black holes in 2+1 dimensions using the conical singularity approach. By introducing a conical singularity along a non contractible cycle and carefully evaluating its contribution to the Chern Simons action, we derive a simple expression for the entropy of a general stationary higher spin black hole. The resulting formula is shown to satisfy the first law of thermodynamics, and yields agreement with previous results based on integrating the first law."

52. van der Schee,Wilke,
From full stopping to transparency – towards more realistic holographic models of heavy-ion collisions,
"Numerically simulating colliding planar gravitational shock waves in

AdS gives rise to rich and interesting dynamics. Wide shocks come to a full stop and expand hydrodynamically, as was found in [1]. High energy collisions (corresponding to thin shocks) pass through each other, after which a plasma forms in the middle, quite akin to heavy-ion collisions. Interestingly, we find a region of negative energy density trailing behind the onmoving shocks. Also, the longitudinal pressure over the energy density at small times is as low as -3, as predicted by analytic work using delta shocks [2]. After this initial stage the pressures become positive and are governed by hydrodynamics within a time $1/T$, with T the local temperature at that time. [1] P.M. Chesler, L.G. Yaffe, PRL 106 (2011) [2] D. Grumiller, P. Romatschke, JHEP 08 (2008) [3] J. Casalderrey-Solana, M.P. Heller, D. Mateos, W. van der Schee, to appear”

53. Wang,Zhao-Long,

Bulk Physics and Descendants,

”We discuss the relation between bulk operators in AdS space and the descendant operators in conformal field theory, as well as its applications in bulk physics.”

54. Wen,Wen-Yu,

Analytic study of two-band holographic superconductor,

55. Wu,Jackson,

A Holographic Model of the Kondo Effect,

”We construct a holographic model of the Kondo effect in the anti-de Sitter space, coupled as a defect to a Chern-Simons gauge field. We demonstrate that our model exhibits both a dynamically generated scale and a Kondo resonance. Our holographic Kondo model may be useful for studying many open problems involving quantum impurities, including for example the Kondo lattice problem.”

56. Yang,Hyun Seok,

Deformation Quantization of Emergent Gravity,

”Emergent gravity is based on a novel form of the equivalence principle known as the Darboux theorem or the Moser lemma in symplectic geometry stating that the electromagnetic force can always be eliminated by a local coordinate transformation as fas as spacetime admits a symplectic structure, namely, a microscopic spacetime becomes noncommutative. If gravity arises

in this way, i.e., is emergent from $U(1)$ gauge theory on a symplectic manifold (M, B) , this picture of emergent gravity suggests a completely new quantization scheme where quantum gravity is defined by quantizing spacetime itself, leading to a dynamical noncommutative spacetime, which is radically different from the conventional approach trying to quantize a phase space of metric fields. Then we show that the gravity can be consistently quantized, at least, in the context of deformation quantization. ”