

Holographic applications: from Quantum Realms to the Big Bang

Friday, 11 July 2025 - Saturday, 19 July 2025

International Conference Center(国际会议中心)



Book of Abstracts

Contents

Holographic QCD (I)	1
Machine learning holographic QCD (I)	1
Machine learning holographic QCD (II)	1
Machine learning holographic QCD (I)	1
Holographic QCD (II)	1
Neural Network for Holographic QCD	1
Gravitational waves from cosmological chiral phase transitions in soft-wall AdS/QCD . .	1
Applications of WKB analysis in bottom-up holographic QCD models	1
Effective theories for strongly-coupled phases of matter with gapped excitations (I) . . .	2
Introduction to pseudospectra and their applications in Holography (I)	2
Effective theories for strongly-coupled phases of matter with gapped excitations (II) . . .	2
Introduction to pseudospectra and their applications in Holography (II)	2
D-commuting SYK model: building quantum chaos from integrable blocks	2
Quantum Corrections in the Low-Temperature Fluid/Gravity Correspondence	2
Gluon polarization contribution to the spin alignment of vector mesons from holography	3
Holographic QFTs on constant curvature manifolds and phase transitions	3
Locating the QCD critical point using neutron-star observations	3
Quantum-Gravity-Corrected Wilson Loop Correlators and Super-Yang-Mills Theory at In- frared	3
Quantum critical phenomenon by holography	3
Composite vortex in holographic binary superfluids	3
Vortex shedding patterns in holographic	3
QCD matter under extreme conditions	4
Spin polarization in off-equilibrium medium at weak and strong coupling	4

Precision tests of string theory	4
The spectral duality relation (online)	4
Hydrodynamics with multiple charges and holography(online)	4
Far From Equilibrium Physics in Finite Size System	4
Holographic study of quark matter properties and QCD phase diagram	4
Near-extremal holographic charge correlators	4
Non-hydrodynamics from hidden symmetry	5
Mass and Isospin Breaking Effects in Holographic QCD	5
ER=EPR and Strange Metal from the quantum Entanglement	5
Unique SYK-rised models of Strange Metals	5
ϕ^4 Loops in AdS3/CFT2	5
Connecting boundary entropy and effective central charge at interfaces	5
The D-brane cylinder amplitude and T-duality	5
Comments on quantum chaos and complexity	6
Resurgence and non-perturbativ effects in $\overline{\text{TT}}$ deformed CFTs	6
Holographic 3D quantum turbulence	6
Holographic Applications on Quark Stars and Black Holes	6
Bubble dynamics in holographic superfluids with first order phase transition	6
Holographic bubble nucleation in astrophysics or the early universe	6
Schwinger-Keldysh holography: hydrodynamics and beyond	6
Pole dynamics in holographic thermal correlators	6
Holographic entanglement entropy inequalities in multipartite systems	7
Chiral phase transition from effective field theory and holography	7
Magnetic field-driven quantum criticality at strong coupling	7
Holographic Page Curve in SYK model with n-Replica Wormholes	7
QCD phase structure from holography	7
A surface growth approach for bulk reconstruction and $\overline{\text{TT}}$ deformation	7
Symmetry-Resolved Entanglement in AdS & BCFT	7
Softening holographic nuclear matter with multi-jump solutions	8
Bulk Spacetime Encoding via Boundary Ambiguities	8

Unify the QGP transports and equations of state in a holographic QCD Model	8
Isospin Asymmetry and Neutron Stars in V-QCD	8
Gravity Dual of Network and Entanglement	8
Holographic multipartite entanglement from upper bound configurations of entanglement entropy combinations	8
Quasinormal modes: from holographic lessons to nonthermal fixed points (online) . . .	8
Celestial holography of massive amplitudes in 4d and 2d	8
Holographic Weyl Anomaly in 8d from General Higher Curvature Gravity	9
Exploring Cosmic Censorship in a Holographic Collider	9
Nucleon gravitational form factors in AdS/QCD	9
Developments on the holographic superconductor and superfluids	9
Applications of numerical relativity in holography	9
The influence of Wilson lines on heavy quark anti-quark potential and mass	9
Bayesian Inference of the Critical Endpoint in 2+1-Flavor System from Holographic QCD	9
Dynamics of chiral phase transition in the soft-wall AdS/QCD	10
Holographic non-conformal interfaces	10
vortex dynamics on the sphere	10
Holographic Kibble-Zurek Mechanism with Discrete Symmetry	10
Universal Time Evolution of Holographic Complexity	10
Holographic Calculation of Thermal Photon Emission Rate and Electric Conductivity in QGP	10
Clarifying the interior dynamics of charged black holes	10

29

Holographic QCD (I)

30

Machine learning holographic QCD (I)

31

Machine learning holographic QCD (II)

Plenary Session / 32

Machine learning holographic QCD (I)

33

Holographic QCD (II)

Plenary Talk / 34

Neural Network for Holographic QCD

Corresponding Author: zengha20@mails.jlu.edu.cn

Plenary Talk / 35

Gravitational waves from cosmological chiral phase transitions in soft-wall AdS/QCD

Corresponding Author: chenyardian@hznu.edu.cn

Plenary Talk / 36

Applications of WKB analysis in bottom-up holographic QCD models

Corresponding Author: miguelangel.martin@usc.edu.cn

37

Effective theories for strongly-coupled phases of matter with gapped excitations (I)

38

Introduction to pseudospectra and their applications in Holography (I)

Corresponding Author: karl.landsteiner@csic.es

39

Effective theories for strongly-coupled phases of matter with gapped excitations (II)

40

Introduction to pseudospectra and their applications in Holography (II)

Corresponding Author: karl.landsteiner@csic.es

Plenary Talk / 41

D-commuting SYK model: building quantum chaos from integrable blocks

Plenary Talk / 42

Quantum Corrections in the Low-Temperature Fluid/Gravity Correspondence

Corresponding Author: yuecongyuan23@mails.ucas.ac.cn

Plenary Talk / 43

Gluon polarization contribution to the spin alignment of vector mesons from holography

Corresponding Author: hiwa.a.ahmed@mailsucas.ac.cn

Plenary Talk / 44

Holographic QFTs on constant curvature manifolds and phase transitions

Corresponding Author: kiritsis@physics.uoc.gr

Plenary Talk / 45

Locating the QCD critical point using neutron-star observations

Plenary Talk / 46

Quantum-Gravity-Corrected Wilson Loop Correlators and Super-Yang-Mills Theory at Infrared

Corresponding Author: nianjun@ucas.ac.cn

Plenary Talk / 47

Quantum critical phenomenon by holography

Plenary Talk / 48

Composite vortex in holographic binary superfluids

Plenary Talk / 49

Vortex shedding patterns in holographic

Corresponding Author: pengyang23@sjtu.edu.cn

Plenary Talk / 50

QCD matter under extreme conditions

Plenary Talk / 51

Spin polarization in off-equilibrium medium at weak and strong coupling

Corresponding Author: linshu8@mail.sysu.edu.cn

Plenary Talk / 52

Precision tests of string theory

Plenary Talk / 53

The spectral duality relation (online)

Plenary Talk / 54

Hydrodynamics with multiple charges and holography(online)

Plenary Talk / 55

Far From Equilibrium Physics in Finite Size System

Plenary Talk / 56

Holographic study of quark matter properties and QCD phase diagram

Corresponding Author: lizhibin@zzu.edu.cn

Plenary Talk / 57

Near-extremal holographic charge correlators

Plenary Talk / 58

Non-hydrodynamics from hidden symmetry

Corresponding Author: phyyin@gmail.com

Plenary Talk / 59

Mass and Isospin Breaking Effects in Holographic QCD

Corresponding Author: gudnason@henu.edu.cn

Plenary Talk / 60

ER=EPR and Strange Metal from the quantum Entanglement

Plenary Talk / 61

Unique SYK-rised models of Strange Metals

Plenary Talk / 62

ϕ^4 Loops in AdS₃/CFT₂

Corresponding Author: w.xiao@physik.uni-muenchen.de

Plenary Talk / 63

Connecting boundary entropy and effective central charge at interfaces

Plenary Talk / 64

The D-brane cylinder amplitude and T-duality

Plenary Talk / 65

Comments on quantum chaos and complexity

Plenary Talk / 66

Resurgence and non-perturbative effects in $\overline{\text{TT}}$ deformed CFTs

Plenary Talk / 67

Holographic 3D quantum turbulence

Plenary Talk / 68

Holographic Applications on Quark Stars and Black Holes

Plenary Talk / 69

Bubble dynamics in holographic superfluids with first order phase transition

Plenary Talk / 70

Holographic bubble nucleation in astrophysics or the early universe

Corresponding Author: wilke.van.der.schee@cern.ch

Plenary Talk / 71

Schwinger-Keldysh holography: hydrodynamics and beyond

Plenary Talk / 72

Pole dynamics in holographic thermal correlators

Corresponding Author: renjie7@mail.sysu.edu.cn

Plenary Talk / 73

Holographic entanglement entropy inequalities in multipartite systems

Corresponding Author: yyangc@hotmail.com

Plenary Talk / 74

Chiral phase transition from effective field theory and holography

Corresponding Author: 24b311002@stu.hit.edu.cn

Plenary Talk / 75

Magnetic field-driven quantum criticality at strong coupling

Plenary Talk / 76

Holographic Page Curve in SYK model with n-Replica Wormholes

Plenary Talk / 77

QCD phase structure from holography

Plenary Talk / 78

A surface growth approach for bulk reconstruction and $T\bar{T}$ deformation

Plenary Talk / 79

Symmetry-Resolved Entanglement in AdS & BCFT

Pleneray Talk / 80

Softening holographic nuclear matter with multi-jump solutions

Corresponding Author: op1g19@soton.ac.uk

Pleneray Talk / 81

Bulk Spacetime Encoding via Boundary Ambiguities

Pleneray Talk / 82

Unify the QGP transports and equations of state in a holographic QCD Model

Pleneray Talk / 83

Isospin Asymmetry and Neutron Stars in V-QCD

Corresponding Author: lorenzobartolini89@gmail.com

Pleneray Talk / 84

Gravity Dual of Network and Entanglement

Pleneray Talk / 85

Holographic multipartite entanglement from upper bound configurations of entanglement entropy combinations

Pleneray Talk / 86

Quasinormal modes: from holographic lessons to nonthermal fixed points (online)

Plenary Talk / 87

Celestial holography of massive amplitudes in 4d and 2d

Plenary Talk / 88

Holographic Weyl Anomaly in 8d from General Higher Curvature Gravity

Plenary Talk / 89

Exploring Cosmic Censorship in a Holographic Collider

Plenary Talk / 90

Nucleon gravitational form factors in AdS/QCD

Corresponding Author: leeyoung1987@ustc.edu.cn

Plenary Talk / 91

Developments on the holographic superconductor and superfluids

Plenary Talk / 92

Applications of numerical relativity in holography

Plenary Talk / 93

The influence of Wilson lines on heavy quark anti-quark potential and mass

Corresponding Author: fujitamitsutoshi@usc.edu.cn

Plenary Talk / 94

Bayesian Inference of the Critical Endpoint in 2+1-Flavor System from Holographic QCD

Plenary Talk / 95

Dynamics of chiral phase transition in the soft-wall AdS/QCD

Plenary Talk / 96

Holographic non-conformal interfaces

Plenary Talk / 97

vortex dynamics on the sphere

Plenary Talk / 98

Holographic Kibble-Zurek Mechanism with Discrete Symmetry

Plenary Talk / 99

Universal Time Evolution of Holographic Complexity

Plenary Talk / 100

Holographic Calculation of Thermal Photon Emission Rate and Electric Conductivity in QGP

Corresponding Author: siyiping23@mails.uca.ac.cn

Plenary Talk / 101

Clarifying the interior dynamics of charged black holes