

KEK Theory Workshop 2025

Report of Contributions

Contribution ID: 1

Type: **not specified**

Welcome to KEK Theory Workshop 2025

Tuesday, 16 December 2025 09:20 (10 minutes)

Presenter: Dr MIURA, Kohtaroh (KEK)

Session Classification: Opening Address

Contribution ID: 2

Type: **not specified**

APS index and the domain-wall fermion

Tuesday, 16 December 2025 09:30 (1 hour)

Presenter: Prof. ONOGI, Tetsuya (Osaka University)

Session Classification: Plenary Session

Contribution ID: 3

Type: **not specified**

Bootstrapping Boundary Conformal Field Theory

Tuesday, 16 December 2025 10:45 (1 hour)

Presenter: Prof. KUSUKI, Yuya (Kyushu University)

Session Classification: Plenary Session

Contribution ID: 4

Type: **not specified**

Recent developments in double-scaled SYK

Tuesday, 16 December 2025 13:30 (1 hour)

Presenter: Prof. OKUYAMA, Kazumi (Shinshu University)

Session Classification: Plenary Session

Contribution ID: 5

Type: **not specified**

Hermitian topological boundary states as open quantum systems

Wednesday, 17 December 2025 09:30 (1 hour)

Presenter: Prof. SATO, Masatoshi (Kyoto University)

Session Classification: Plenary Session

Contribution ID: 6

Type: **not specified**

Topology of nonlinear dynamics

Wednesday, 17 December 2025 10:45 (1 hour)

Presenter: Prof. SAGAWA, Takahiro (The University of Tokyo)

Session Classification: Plenary Session

Contribution ID: 7

Type: **not specified**

Complex saddles of de Sitter gravity via holography

Wednesday, 17 December 2025 13:30 (1 hour)

Presenter: Prof. HIKIDA, Yasuaki (Osaka Institute of Technology)

Session Classification: Plenary Session

Contribution ID: 8

Type: **not specified**

Heterotic string theory and $N=(0,1)$ supersymmetric field theory

Thursday, 18 December 2025 09:30 (1 hour)

Presenter: Prof. YONEKURA, Kazuya (Tohoku University)

Session Classification: Plenary Session

Contribution ID: 9

Type: **not specified**

Holography for a Closed Universe with a Quantum Reference Frame

Thursday, 18 December 2025 10:45 (1 hour)

Presenter: Prof. GOTO, Kanato (Osaka University)

Session Classification: Plenary Session

Contribution ID: **10**

Type: **not specified**

Towards a Hamiltonian Framework for String-Inspired Nonlocality

Tuesday, 16 December 2025 14:50 (20 minutes)

Presenter: Dr SHAO, Wei-Hsiang (RIKEN iTHEMS)

Session Classification: Parallel Session

Contribution ID: 11

Type: **not specified**

Anomaly-induced negative magnetoresistance in D3-D7 systems in holography

Tuesday, 16 December 2025 15:10 (20 minutes)

Presenter: Prof. NAKAMURA, Shin (Chuo University)

Session Classification: Parallel Session

Contribution ID: 12

Type: **not specified**

Fundamental structure of string geometry theory

Tuesday, 16 December 2025 15:30 (20 minutes)

Presenter: Prof. SATO, Matsuo (Hirosaki University)

Session Classification: Parallel Session

Contribution ID: **13**

Type: **not specified**

TBD

Tuesday, 16 December 2025 15:50 (20 minutes)

Presenter: Dr LOGES, Gregory (KEK)

Session Classification: Parallel Session

Contribution ID: 14

Type: **not specified**

Twist field deformations in string field theory

Tuesday, 16 December 2025 16:10 (20 minutes)

Presenter: Mr ZHANG, Xianghang (Nagoya University)

Session Classification: Parallel Session

Contribution ID: 15

Type: **not specified**

Chiral Anomaly in $(3 + 1)$ -dimensional Staggered Fermion System

Tuesday, 16 December 2025 14:50 (20 minutes)

Presenter: Dr AOKI, Shoto (RIKEN iTHEMS)

Session Classification: Parallel Session

Contribution ID: 16

Type: **not specified**

How to formulate the Z_8 topological invariant of Majorana fermion on a lattice

Tuesday, 16 December 2025 15:10 (20 minutes)

Presenter: Mr ARAKI, Sho (Osaka University)

Session Classification: Parallel Session

Contribution ID: 17

Type: **not specified**

Non-singlet conserved charges and anomalies in 3+1 D staggered fermions

Tuesday, 16 December 2025 15:30 (20 minutes)

Presenter: Mr YAMAOKA, Tatsuya (Osaka University)

Session Classification: Parallel Session

Contribution ID: **18**

Type: **not specified**

Simulating the real-time quantum evolution by the Lefschetz thimble method

Tuesday, 16 December 2025 15:50 (20 minutes)

Presenter: Prof. NISHIMURA, Jun (KEK/SOKENDAI)

Session Classification: Parallel Session

Contribution ID: **19**

Type: **not specified**

TBD

Tuesday, 16 December 2025 16:10 (20 minutes)

Presenter: Mr YAMAMORI, Naoyuki (KEK/SOKENDAI)

Session Classification: Parallel Session

Contribution ID: 20

Type: **not specified**

Unified exact WKB framework for quantum resonance and scattering theory

Tuesday, 16 December 2025 16:50 (20 minutes)

Presenter: Dr MORIKAWA, Okuto (RIKEN iTHEMS)

Session Classification: Parallel Session

Contribution ID: **21**

Type: **not specified**

TBD

Tuesday, 16 December 2025 17:10 (20 minutes)

Presenter: Mr CHAU, Tin-Long (KEK/SOKENDAI)

Session Classification: Parallel Session

Contribution ID: **22**

Type: **not specified**

TBD

Tuesday, 16 December 2025 17:30 (20 minutes)

Presenter: Mr WANG, Cheng-Tsung (KEK/SOKENDAI)

Session Classification: Parallel Session

Contribution ID: 23

Type: **not specified**

High-Energy Pion Scattering in Holographic QCD

Tuesday, 16 December 2025 16:50 (20 minutes)

Presenter: Mr PYSZKOWSKI, Bartosz (Kyoto University, YITP)

Session Classification: Parallel Session

Contribution ID: 24

Type: **not specified**

Large θ angle in the two-dimensional large N $CP^{\{N-1\}}$ model

Tuesday, 16 December 2025 17:10 (20 minutes)

Presenter: Mr SUGENO, Tsubasa (Tohoku University)

Session Classification: Parallel Session

Contribution ID: 25

Type: **not specified**

Bootstrapping quantum mechanics

Tuesday, 16 December 2025 17:30 (20 minutes)

Presenter: Prof. MORITA, Takeshi (Shizuoka University)

Session Classification: Parallel Session

Contribution ID: 26

Type: **not specified**

Causal Bounds on EFTs with anomalies with a Pseudoscalar, Photons, and Gravitons (bootstrapping EFT)

Tuesday, 16 December 2025 17:50 (20 minutes)

Presenter: Dr JEONG, Jaehoon (KIAS)

Session Classification: Parallel Session

Contribution ID: 27

Type: **not specified**

No-boundary Proposal and Hořava-Lifshitz Gravity

Wednesday, 17 December 2025 14:50 (20 minutes)

Presenter: Dr MATSUI, Hiroki (Nihon University)

Session Classification: Parallel Session

Contribution ID: 28

Type: **not specified**

Kaluza–Klein photon contribution to charged black hole in 2D perspective

Wednesday, 17 December 2025 15:10 (20 minutes)

Presenter: Mr MIYAUCHI, Yu (Keio University)

Session Classification: Parallel Session

Contribution ID: 29

Type: **not specified**

Effective Dynamics of Spherically Symmetric Static Spacetime

Wednesday, 17 December 2025 15:30 (20 minutes)

Presenter: Dr YOKOKURA, Yuki (KEK)

Session Classification: Parallel Session

Contribution ID: 30

Type: **not specified**

Essential Renormalization Group Equation for Gravity coupled to a Scalar field

Wednesday, 17 December 2025 15:50 (20 minutes)

Presenter: Prof. OHTA, Nobuyoshi (Osaka Metropolitan University)

Session Classification: Parallel Session

Contribution ID: 31

Type: **not specified**

On Nonlinear-Supersym metric General Relativity(NLSGR)

Wednesday, 17 December 2025 16:10 (20 minutes)

Presenter: Prof. SHIMA, Kazunari (Saitama Institute of Technology)

Session Classification: Parallel Session

Contribution ID: 32

Type: **not specified**

Holography by conformal smearing

Wednesday, 17 December 2025 14:50 (20 minutes)

Presenter: Prof. AOKI, Sinya (RIKEN iTHEMS)

Session Classification: Parallel Session

Contribution ID: 33

Type: **not specified**

Quark confinement due to symmetric instantons reflecting holography

Wednesday, 17 December 2025 15:10 (20 minutes)

Presenter: Prof. KONDO, Kei-Ichi (Chiba University)

Session Classification: Parallel Session

Contribution ID: 34

Type: **not specified**

Dyonic lines in 3d monopole semiclassics

Wednesday, 17 December 2025 15:30 (20 minutes)

Presenter: Dr HAYASHI, Yui (Kyoto University, YITP)

Session Classification: Parallel Session

Contribution ID: 35

Type: **not specified**

Lefshetz thimble study of U(1) gauge theory in 1 + 1 dimensions

Wednesday, 17 December 2025 15:50 (20 minutes)

Presenter: Dr OHATA, Hiroki (KEK)

Session Classification: Parallel Session

Contribution ID: 36

Type: **not specified**

Complex Langevin Lattice QCD at Extremely High Density for Color Superconductivity

Wednesday, 17 December 2025 16:10 (20 minutes)

Presenter: Dr MIURA, Kohtaroh (KEK)

Session Classification: Parallel Session

Contribution ID: 37

Type: **not specified**

Higher-form symmetries and spin structure in axion electrodynamics

Wednesday, 17 December 2025 16:50 (20 minutes)

Presenter: Dr YOKOKURA, Ryo (Keio University)

Session Classification: Parallel Session

Contribution ID: 38

Type: **not specified**

Vacuum structures of QCD2 from non-invertible anyon condensation

Wednesday, 17 December 2025 17:10 (20 minutes)

Presenter: Dr KAN, Naoto (Osaka University)

Session Classification: Parallel Session

Contribution ID: 39

Type: **not specified**

Modified entangled states for perfect quantum teleportation

Wednesday, 17 December 2025 17:30 (20 minutes)

Presenter: Mr KOBAYASHI, Sora (Chiba University)

Session Classification: Parallel Session

Contribution ID: 40

Type: **not specified**

Semi-classical correspondence between Petz map and Bayes' rule: from Lindbladian to reverse diffusion

Wednesday, 17 December 2025 17:50 (20 minutes)

Presenter: Mr NASU, Ryota (Shizuoka University)

Session Classification: Parallel Session

Contribution ID: 41

Type: **not specified**

Description of curved spaces by finite-size matrices

Wednesday, 17 December 2025 18:10 (20 minutes)

Presenter: Mr SEKO, Tatsuya (Shizuoka University)

Session Classification: Parallel Session

Contribution ID: 42

Type: **not specified**

The E11-Inspired Approach to Gravity

Wednesday, 17 December 2025 16:50 (20 minutes)

Presenter: Dr GLENNON, Keith (OIST)

Session Classification: Parallel Session

Contribution ID: 43

Type: **not specified**

Higher-derivative theory of fermion and supersymmetry

Wednesday, 17 December 2025 17:10 (20 minutes)

Presenter: Prof. INAMI, Takeo (RIKEN)

Session Classification: Parallel Session

Contribution ID: 44

Type: **not specified**

When Disorder Meets Conformal Defects: The Emergence of Logarithmic Structures

Wednesday, 17 December 2025 17:30 (20 minutes)

Presenter: Mr SHIMAMORI, Soichiro (Osaka University)

Session Classification: Parallel Session

Contribution ID: 45

Type: **not specified**

Algebraic Structure in the Exact Renormalization Group

Wednesday, 17 December 2025 17:50 (20 minutes)

Presenter: Mr TANAKA, Taichi (Nihon University)

Session Classification: Parallel Session

Contribution ID: 46

Type: **not specified**

On anomalies in family unification models

Wednesday, 17 December 2025 18:10 (20 minutes)

Presenter: Dr WADA, Hiroki (Tohoku University)

Session Classification: Parallel Session