

**Clues to a mysterious
Universe - exploring the
interface of particle, gravity
and quantum physics**

Report of Contributions

Contribution ID: 1

Type: **not specified**

Welcome reception

Sunday, 26 June 2022 18:00 (2 hours)

Contribution ID: 2

Type: **not specified**

Opening

Monday, 27 June 2022 08:45 (15 minutes)

Presenter: VEIDER-WALSER, Viktoria

Contribution ID: 3

Type: **not specified**

The Higgs boson a decade after discovery

Monday, 27 June 2022 09:00 (30 minutes)

Presenter: JAKOBS, Karl

Contribution ID: 4

Type: **not specified**

Higgs turns 10

Friday, 1 July 2022 09:00 (30 minutes)

Presenter: ZANDERIGHI , Giulia

Contribution ID: 5

Type: **not specified**

Bringing Yang-Mills theory closer to quasiclassics

Monday, 27 June 2022 10:00 (30 minutes)

Presenter: SHIFMAN, Mikhail

Contribution ID: 6

Type: **not specified**

How to avoid the appearance of a classical world in gravity experiments

Monday, 27 June 2022 11:00 (30 minutes)

Presenter: ASPELMEYER, Markus

Contribution ID: 7

Type: **not specified**

Higher Order Corrections to Classical Gravity

Monday, 27 June 2022 11:30 (30 minutes)

Presenter: BLÜMLEIN, Johannes

Contribution ID: 8

Type: **not specified**

Humboldt Foundation presentation

Monday, 27 June 2022 12:00 (30 minutes)

Presenter: MEHLICH, Steffen

Contribution ID: 9

Type: **not specified**

Quantum mechanics from classical statistics: Fermionic quantum field theories as probabilistic automata

Monday, 27 June 2022 14:00 (30 minutes)

Presenter: WETTERICH, Christof

Contribution ID: **10**

Type: **not specified**

Axion with and without gravity

Monday, 27 June 2022 14:30 (30 minutes)

Presenter: DVALI, Georgi

Contribution ID: 11

Type: **not specified**

Maximally entangled state at small Bjorken x

Monday, 27 June 2022 15:00 (30 minutes)

Presenter: KHARZEEV, Dmitri

Contribution ID: 12

Type: **not specified**

Poster Introductions

Monday, 27 June 2022 17:00 (42 minutes)

Presenters: BOCHNIAK, Arkadiusz; KORAJAC, Arman; LECHNER, Daniel; ARAUJO, Gabriela; GUPTA, Ghnashyam; FRANK, Isabel; SONAWANE, Mangesh; MATTEINI, Marco; NIKOLIC, Marco; SADL, Mitja; WIEHE, Moritz; DELGADO, Paola; MAJI, Rituparna; GUPTA, Shubham

Contribution ID: 13

Type: **not specified**

Resummation of superleading logarithms at hadron colliders —solution to a 16-year old QCD problem

Monday, 27 June 2022 09:30 (30 minutes)

Presenter: NEUBERT, Matthias

Contribution ID: 14

Type: **not specified**

Falling through masses in superposition: Quantum reference frames for indefinite metrics

Monday, 27 June 2022 16:30 (30 minutes)

Presenter: BRUKNER, Caslav

Contribution ID: 15

Type: **not specified**

Physics with antihydrogen atoms

Monday, 27 June 2022 16:00 (30 minutes)

Presenter: MALBRUNOT, Chloe

Contribution ID: 16

Type: **not specified**

Quarkyonic Matter and the Phase Diagram of QCD

Tuesday, 28 June 2022 09:00 (30 minutes)

Presenter: MCLERRAN, Larry

Contribution ID: 17

Type: **not specified**

The role of the chiral anomaly in the proton's spin and sphaleron transitions at small x

Tuesday, 28 June 2022 09:30 (30 minutes)

Presenter: VENUGOPALAN, Raju

Contribution ID: **18**

Type: **not specified**

Scale hierarchies and cosmology with an emergent particle physics Standard Model

Tuesday, 28 June 2022 10:00 (30 minutes)

Presenter: BASS, Steven

Contribution ID: 19

Type: **not specified**

Different manifestations of gravity

Tuesday, 28 June 2022 11:00 (30 minutes)

Presenter: HEISENBERG, Lavinia

Contribution ID: 20

Type: **not specified**

Cosmology with Galaxy Clusters

Tuesday, 28 June 2022 11:30 (30 minutes)

Presenter: WELLER, Jochen

Contribution ID: 21

Type: **not specified**

Introduction to direct dark matter detection and the COSINUS experiment

Tuesday, 28 June 2022 12:00 (30 minutes)

Presenter: REINDL, Florian

Contribution ID: 22

Type: **not specified**

Quantum sensors for (high energy) particle physics experiments

Tuesday, 28 June 2022 14:00 (30 minutes)

Presenter: DOSER, Michael

Contribution ID: 23

Type: **not specified**

Hardware efficient quantum simulation of non-abelian gauge theories with qudits on Rydberg platforms

Tuesday, 28 June 2022 14:30 (30 minutes)

Presenter: ZACHE, Torsten

Contribution ID: 24

Type: **not specified**

Probing confinement on a quantum computer

Tuesday, 28 June 2022 15:00 (30 minutes)

Presenter: HAUKE, Philipp

Contribution ID: 25

Type: **not specified**

Beyond standard model particle physics with neutrinos and neutrino telescopes

Tuesday, 28 June 2022 16:00 (30 minutes)

Presenter: HELBING, Klaus

Contribution ID: 26

Type: **not specified**

Radioactive Molecules: Novel Probes for New Physics

Tuesday, 28 June 2022 16:30 (30 minutes)

Presenter: MALBRUNOT-ETTENAUER, Stephan

Contribution ID: 27

Type: **not specified**

Shedding light on exclusive B decays

Tuesday, 28 June 2022 17:00 (30 minutes)

Presenter: BENEKE, Martin

Contribution ID: 28

Type: **not specified**

Applications of Plasma-Wakefield accelerators to particle colliders

Wednesday, 29 June 2022 09:00 (30 minutes)

Presenter: FOSTER, Brian

Contribution ID: 29

Type: **not specified**

BSM physics in Yukawa couplings and flavour symmetries

Wednesday, 29 June 2022 09:30 (30 minutes)

Presenter: POKORSKI, Stefan

Contribution ID: **30**

Type: **not specified**

Gravitating pairs of photons

Wednesday, 29 June 2022 10:00 (30 minutes)

Presenter: CHRUSCIEL, Piotr

Contribution ID: **31**

Type: **not specified**

The LISA mission

Wednesday, 29 June 2022 11:00 (30 minutes)

Presenter: VITALE, Stefano

Contribution ID: 32

Type: **not specified**

Multi-messenger astrophysics with neutrinos and gamma rays

Wednesday, 29 June 2022 11:30 (30 minutes)

Presenter: ACKERMANN, Markus

Contribution ID: 33

Type: **not specified**

The quest for the mechanism behind the matter-antimatter asymmetry

Wednesday, 29 June 2022 12:00 (30 minutes)

Presenter: HARZ, Julia

Contribution ID: 34

Type: **not specified**

Gravity resonance spectroscopy, and a search for Lorentz violation, beyond-Riemann and entropic gravity

Thursday, 30 June 2022 09:00 (30 minutes)

Presenter: ABELE, Hartmut

Contribution ID: 35

Type: **not specified**

Flavour Physics as a Window for New Physics Searches

Thursday, 30 June 2022 09:30 (30 minutes)

Presenter: KRIZAN, Peter

Contribution ID: **36**

Type: **not specified**

QCD results from LHCb

Thursday, 30 June 2022 10:00 (30 minutes)

Presenter: OBLAKOWKA-MUCHA, Agnieszka

Contribution ID: 37

Type: **not specified**

Towards Macroscopic Quantum Superpositions of a Nanoparticle

Thursday, 30 June 2022 11:00 (30 minutes)

Presenter: ROMERO-ISART, Oriol

Contribution ID: **38**

Type: **not specified**

Quantum Link Models: a Resource-efficient Framework for the Quantum Simulation and Quantum Computation of Gauge Theories

Thursday, 30 June 2022 11:30 (30 minutes)

Presenter: WIESE, Uwe-Jens

Contribution ID: 39

Type: **not specified**

Ideas for applications of quantum computing to particle physics

Thursday, 30 June 2022 12:00 (30 minutes)

Presenter: GRAY, Heather

Contribution ID: 40

Type: **not specified**

Poster prize award

Thursday, 30 June 2022 12:30 (5 minutes)

Contribution ID: 41

Type: **not specified**

Resolution of the CIPT-FOPT discrepancy problem for hadronic tau decays

Thursday, 30 June 2022 14:00 (30 minutes)

Presenter: HOANG, Andre

Contribution ID: 42

Type: **not specified**

Differentiable Programming for High Energy Physics

Thursday, 30 June 2022 14:30 (30 minutes)

Presenter: HEINRICH, Lukas

Contribution ID: 43

Type: **not specified**

Quantum Simulation of Lattice Gauge Theories - Requirements, Challenges, Methods

Thursday, 30 June 2022 15:00 (30 minutes)

Presenter: ZOHAR, Erez

Contribution ID: 44

Type: **not specified**

Photon-conversion into the dark sector as a probe of new physics

Presenter: PRADLER, Josef

Contribution ID: 45

Type: **not specified**

Experimental searches for n-n' oscillations - recent results from PSI

Friday, 1 July 2022 09:30 (30 minutes)

Presenter: BODEK, Kazimierz

Contribution ID: 46

Type: **not specified**

Gravity in large quantum states and the Aharonov-Bohm effect

Friday, 1 July 2022 10:00 (30 minutes)

Presenter: ASENBAUM, Peter

Contribution ID: 47

Type: **not specified**

Tensor network simulations for high-energy physics

Friday, 1 July 2022 11:00 (30 minutes)

Presenter: MONTANGERO, Simone

Contribution ID: 48

Type: **not specified**

Variational quantum simulations on noisy quantum devices: strategies for circuit design and error mitigation

Friday, 1 July 2022 11:30 (30 minutes)

Presenter: KÜHN, Stefan

Contribution ID: 49

Type: **not specified**

Hadronic light-by-light scattering and the muon $g-2$

Friday, 1 July 2022 12:00 (30 minutes)

Presenter: PROCURA, Massimiliano

Contribution ID: 50

Type: **not specified**

Closing and Farewell

Friday, 1 July 2022 12:30 (5 minutes)

Presenter: BASS, Steven

Contribution ID: 51

Type: **not specified**

A Cold-Atom Approach to Chiral Symmetry Restoration and Charge Confinement

Thursday, 30 June 2022 16:00 (15 minutes)

Presenter: GONZALEZ CUADRA, Daniel

Contribution ID: 52

Type: **not specified**

Exponential Volume Scaling in (Constrained) Lattice Gauge Theories

Thursday, 30 June 2022 16:15 (15 minutes)

Presenter: GRABOWSKA, Dorota

Contribution ID: 53

Type: **not specified**

Towards an Ising universe

Thursday, 30 June 2022 16:30 (15 minutes)

Presenter: KOUTROULIS, Fotis

Contribution ID: 54

Type: **not specified**

Towards a full description of MeV dark matter decoupling

Thursday, 30 June 2022 16:45 (15 minutes)

Presenter: CHU, Xiaoyong

Contribution ID: 55

Type: **not specified**

Exploring the limits of quantum theory inside nucleons

Thursday, 30 June 2022 17:00 (15 minutes)

Presenter: ECKSTEIN, Michal

Contribution ID: 56

Type: **not specified**

SUSY solution to the muon (g-2) anomaly with and without stable neutralino

Thursday, 30 June 2022 17:15 (15 minutes)

Presenter: SAKURAI, Kazuki

Contribution ID: 57

Type: **not specified**

CRESST - Direct Dark Matter Search Experiment

Thursday, 30 June 2022 17:30 (15 minutes)

Presenter: MOKINA, Valentyna

Contribution ID: 58

Type: **not specified**

Recent Developments in 3d Flat Space Holography

Thursday, 30 June 2022 17:45 (15 minutes)

Presenter: RIEGLER, Max