

# **LBLN-UTokyo Quantum Computing Workshop**

## **Report of Contributions**

Contribution ID: 1

Type: **not specified**

# Introduction

*Monday 30 October 2023 11:00 (5 minutes)*

**Presenter:** TERASHI, Koji (University of Tokyo (JP))

Contribution ID: 2

Type: **not specified**

# Gauge invariant formulations of non-Abelian lattice gauge theories

*Monday 30 October 2023 11:05 (30 minutes)*

**Presenter:** BAUER, Christian Walter (Lawrence Berkeley National Lab. (US))

Contribution ID: 3

Type: **not specified**

## Discussion

*Monday 30 October 2023 11:35 (15 minutes)*

Contribution ID: 4

Type: **not specified**

**TBD**

*Monday 30 October 2023 11:50 (30 minutes)*

**Presenter:** Dr NAGANO, Lento (University of Tokyo (JP))

Contribution ID: 5

Type: **not specified**

## Discussion

*Monday 30 October 2023 12:20 (15 minutes)*

Contribution ID: 6

Type: **not specified**

## Lunch

*Monday 30 October 2023 12:35 (1h 25m)*

Contribution ID: 7

Type: **not specified**

## AIDE-QC and QSA at LBNL

*Monday 30 October 2023 14:00 (30 minutes)*

**Presenter:** DE JONG, Wibe ((Lawrence Berkeley National Lab. (US))



Contribution ID: 8

Type: **not specified**

## Discussion

*Monday 30 October 2023 14:30 (15 minutes)*

Contribution ID: 9

Type: **not specified**

## Conserved charges in the real-device quantum simulation of integrable spin chains

*Monday 30 October 2023 14:45 (30 minutes)*

**Presenter:** OKUDA, Takuya (University of Tokyo)

Contribution ID: **10**

Type: **not specified**

## Discussion

*Monday 30 October 2023 15:15 (15 minutes)*

Contribution ID: **11**

Type: **not specified**

## Break

*Monday 30 October 2023 15:30 (30 minutes)*

Contribution ID: 12

Type: **not specified**

# Quantum Simulation of Schwinger model & Energy Spectrum

*Monday 30 October 2023 16:00 (30 minutes)*

**Presenter:** HONDA, Masazumi (Kyoto U. (JP))

Contribution ID: **13**

Type: **not specified**

## Discussion

*Monday 30 October 2023 16:30 (15 minutes)*

Contribution ID: 14

Type: **not specified**

# Quantum Simulation of Finite Temperature Schwinger Model via Quantum Imaginary Time Evolution

*Monday 30 October 2023 16:45 (30 minutes)*

**Presenter:** PEDERSEN, Juan William (University of Tokyo (JP))

Contribution ID: **15**

Type: **not specified**

## Discussion

*Monday 30 October 2023 17:15 (15 minutes)*



Contribution ID: **16**

Type: **not specified**

## Dinner

*Monday 30 October 2023 18:00 (2 hours)*

Contribution ID: 17

Type: **not specified**

# Effectively Leveraging NISQ Hardware for Quantum Simulations of Gauge Theories

*Tuesday 31 October 2023 09:00 (30 minutes)*

**Presenter:** GUSTAFSON, Erik (Fermi National Accelerator Lab. (US))

Contribution ID: **18**

Type: **not specified**

## Discussion

*Tuesday 31 October 2023 09:30 (15 minutes)*

Contribution ID: **19**

Type: **not specified**

## Enhancing qubit circuits with qutrits

*Tuesday 31 October 2023 09:45 (30 minutes)*

**Presenter:** IIYAMA, Yutaro (University of Tokyo (JP))

Contribution ID: **20**

Type: **not specified**

## Discussion

*Tuesday 31 October 2023 10:15 (15 minutes)*

Contribution ID: **21**

Type: **not specified**

## Break

*Tuesday 31 October 2023 10:30 (30 minutes)*

Contribution ID: 22

Type: **not specified**

## BQSKit Overview

*Tuesday 31 October 2023 11:00 (30 minutes)*

**Presenter:** IANCU, Costin (Lawrence Berkeley National Lab. (US))

Contribution ID: **23**

Type: **not specified**

## Discussion

*Tuesday 31 October 2023 11:30 (15 minutes)*



Contribution ID: 24

Type: **not specified**

**Lunch**

*Tuesday 31 October 2023 11:45 (1h 45m)*

Contribution ID: 25

Type: **not specified**

**TBD**

*Tuesday 31 October 2023 13:30 (30 minutes)*

**Presenter:** KAJI, Toshiaki (University of Tokyo (JP))

Contribution ID: 26

Type: **not specified**

## Discussion

*Tuesday 31 October 2023 14:00 (15 minutes)*

Contribution ID: 27

Type: **not specified**

## Enhanced quantum circuit compilation with Ising machines

*Tuesday 31 October 2023 14:15 (30 minutes)*

**Presenter:** NAITO, Soshun (University of Tokyo (JP))

Contribution ID: **28**

Type: **not specified**

## Discussion

*Tuesday 31 October 2023 14:45 (15 minutes)*

Contribution ID: **29**

Type: **not specified**

## Break

*Tuesday 31 October 2023 15:00 (30 minutes)*

Contribution ID: **30**

Type: **not specified**

## Talk 12

Contribution ID: **31**

Type: **not specified**

## Discussion



Contribution ID: 32

Type: **not specified**

## Extra Discussion (future plan, etc.)

*Tuesday 31 October 2023 15:30 (45 minutes)*

Contribution ID: 33

Type: **not specified**

## Concluding

*Tuesday 31 October 2023 16:15 (10 minutes)*