

Physics Frontiers with Quantum Science and Technology

Report of Contributions

Contribution ID: 1

Type: **not specified**

Opening

Wednesday 9 March 2022 08:30 (10 minutes)

Presenter: ASAI, Shoji (University of Tokyo (JP))

Contribution ID: 2

Type: **not specified**

Closing

Thursday 10 March 2022 19:00 (10 minutes)

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

Contribution ID: 3

Type: **not specified**

Dark matter searches with quantum sensing technologies

Wednesday 9 March 2022 08:40 (30 minutes)

Presenter: CHOU, Aaron (Fermilab)

Session Classification: Quantum sensor/computer developments and physics applications

Contribution ID: 4

Type: **not specified**

Detecting gravitational waves with atom interferometry

Thursday 10 March 2022 08:30 (30 minutes)

Presenter: HOGAN, Jason (Stanford University)

Session Classification: Quantum computer/sensor applications for physics

Contribution ID: 5

Type: **not specified**

Axion dark matter searches with magnon

Presenter: IKEDA, Tomonori (Kyoto University)

Session Classification: Quantum sensor/computer developments and physics applications

Contribution ID: 6

Type: **not specified**

Solid-state quantum system and applications to physics

Wednesday 9 March 2022 10:10 (30 minutes)

Presenters: AWSCHALOM, David (University of Chicago); HEREMANS, Joseph (University of Chicago)

Session Classification: Quantum sensor/computer developments and physics applications

Contribution ID: 7

Type: **not specified**

Superconducting quantum system and related technologies

Presenter: MCDERMOTT, Robert (University of Wisconsin Madison)

Session Classification: Quantum sensor/computer developments and physics applications

Contribution ID: 8

Type: **not specified**

Mesoscopic physics and quantum sensing

Wednesday 9 March 2022 16:30 (30 minutes)

Presenter: KOBAYASHI, Kensuke (University of Tokyo)

Session Classification: Quantum computer/sensor developments and physics applications

Contribution ID: 9

Type: **not specified**

Tentative: Axion searches using magnon

Session Classification: Quantum sensor/computer developments and physics applications

Contribution ID: **10**

Type: **not specified**

Quantum computing with trapped ions

Wednesday 9 March 2022 16:00 (30 minutes)

Presenter: TAKAHASHI, Hiroki (OIST)

Session Classification: Quantum computer/sensor developments and physics applications

Contribution ID: 11

Type: **not specified**

Quantum sensing of proton spins with a single NV center

Wednesday 9 March 2022 10:40 (30 minutes)

Presenter: ABE, Eisuke (RIKEN)

Session Classification: Quantum sensor/computer developments and physics applications

Contribution ID: 12

Type: **not specified**

Tentative: quantum-sensor developments

Session Classification: Quantum computer/sensor developments and physics applications

Contribution ID: 13

Type: **not specified**

Quantum computer development and physics applications at ETH Zurich

Presenter: EICHLER, Christopher (ETH Zurich)

Session Classification: Quantum computer/sensor applications for physics

Contribution ID: 14

Type: **not specified**

Quantum sensor applications to high-energy physics at CERN

Wednesday 9 March 2022 17:00 (30 minutes)

Presenter: DOSER, Michael (CERN)

Session Classification: Quantum computer/sensor developments and physics applications

Contribution ID: 15

Type: **not specified**

Tentative: quantum information and spacetime and matter physics

Session Classification: Quantum computer/sensor applications for physics

Contribution ID: 16

Type: **not specified**

Quantum computing, sensor and material science at DESY

Presenter: BORRAS, Kerstin (DESY / RWTH Aachen University)

Session Classification: Quantum computer/sensor applications for physics

Contribution ID: 17

Type: **not specified**

Quantum computing applications to HEP event reconstruction

Thursday 10 March 2022 10:00 (30 minutes)

Presenter: GRAY, Heather (UC Berkeley/LBNL)

Session Classification: Quantum computer/sensor applications for physics

Contribution ID: **18**

Type: **not specified**

Superconducting RF technologies for quantum applications

Thursday 10 March 2022 08:00 (30 minutes)

Presenters: ROMANENKO, Alexander (Fermilab); GRASELLINO, Anna

Session Classification: Quantum computer/sensor applications for physics

Contribution ID: 19

Type: **not specified**

Superconducting Circuits for Quantum Computing and Sensing

Wednesday 9 March 2022 09:10 (30 minutes)

Presenter: MCDERMOTT, Robert (University of Wisconsin Madison)

Session Classification: Quantum sensor/computer developments and physics applications

Contribution ID: 20

Type: **not specified**

Quantum computing applications to high-energy physics at ICEPP

Thursday 10 March 2022 10:30 (30 minutes)

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

Session Classification: Quantum computer/sensor applications for physics

Contribution ID: 21

Type: **not specified**

Quantum computing applications to HEP simulations

Thursday 10 March 2022 09:00 (30 minutes)

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

Session Classification: Quantum computer/sensor applications for physics

Contribution ID: 22

Type: **not specified**

TBD

Session Classification: Quantum computer/sensor applications for physics

Contribution ID: 23

Type: **not specified**

Extreme Universe of spacetime and matter from quantum information

Thursday 10 March 2022 16:00 (30 minutes)

Presenter: TAKAYANAGI, Tadashi (Kyoto U.)

Session Classification: Quantum computer applications for physics

Contribution ID: 24

Type: **not specified**

Quantum simulation and theory for high-energy physics at CERN

Thursday 10 March 2022 16:30 (30 minutes)

Presenter: GRABOWSKA, Dorota Maria (CERN)

Session Classification: Quantum computer applications for physics

Contribution ID: 25

Type: **not specified**

Quantum computing applications to high-energy physics at CERN

Thursday 10 March 2022 18:00 (30 minutes)

Presenter: VALLECORSA, Sofia (CERN)

Session Classification: Quantum-computer applications for physics

Contribution ID: 26

Type: **not specified**

Quantum computing developments and future prospects at IBM

Thursday 10 March 2022 18:30 (30 minutes)

Presenter: ONODERA, Tamiya (IBM Research, Tokyo)

Session Classification: Quantum-computer applications for physics

Contribution ID: 27

Type: **not specified**

Quantum computing applications to high-energy physics at ICEPP

Session Classification: Quantum-computer applications for physics

Contribution ID: 28

Type: **not specified**

Repeated Quantum Error Correction in a Surface Code with Superconducting Circuits

Wednesday 9 March 2022 18:00 (30 minutes)

Presenter: EICHLER, Christopher (ETH Zurich)

Session Classification: Quantum computer/sensor developments and physics applications

Contribution ID: 29

Type: **not specified**

Quantum computing, sensor and material science at DESY

Wednesday 9 March 2022 18:30 (30 minutes)

Presenter: BORRAS, Kerstin (DESY / RWTH Aachen University)

Session Classification: Quantum computer/sensor developments and physics applications

Contribution ID: **30**

Type: **not specified**

Quantum computing applications to physics at CalTech

Session Classification: Quantum computer applications for physics

Contribution ID: 31

Type: **not specified**

Quantum machine learning and algorithm development

Thursday 10 March 2022 17:00 (30 minutes)

Presenter: MITARAI, Kousuke (Osaka University)

Session Classification: Quantum computer applications for physics