The 26th Science in Japan Forum

Quantum Taste of the Universe

Speakers

Masashi Hazumi
(QUP, KEK)

Adrian T. Lee
(QUP / University of California, Berkeley)

Akito Kusaka
(The University of Tokyo / Lawrence Berkeley National Laboratory)

Reina Maruyama
(Yale University)

Maurice Garcia-Sciveres
(QUP / Lawrence Berkeley National Laboratory)

Hideo Iizuka
(QUP / Toyota Central R&D Labs., Inc.)

Moderator

Dmitri Denisov
(Brookhaven National Laboratory / Stony Brook University)

Date

Friday, June 9th, 2023, 1:00 pm – 6:10 pm (EDT)

Format

Hybrid (Onsite & Online)

Venue *Invitation Only

Cosmos Club (2121 Massachusetts Ave., NW, Washington, DC)

Online Registration by Thursday, June 8th (EDT)

Japan Society for the Promotion of Science
日本学術振興会

AAAS · U.S. Department of Energy, Office of Science · KEK High Energy Accelerator Research Organization · NSF · QUP · Toyota Chuken · wpi

Program

1:00 pm - Opening Remarks
1:20 pm - Keynote Speech
Masashi Hazumi

2:00 pm - Session 1:
Observations of the quantum fields in the early universe through Cosmic Microwave Background (CMB)
Adrian T. Lee
Akito Kusaka

3:00 pm - Coffee Break

3:20 pm - Session 2:
Dark Matter, searching for relic quantum fields in the current universe
Reina Maruyama
Maurice Garcia-Sciveres

4:20 pm - Session 3:
Quantum field and future society
Hideo Iizuka

4:50 pm - Coffee Break

5:10 pm - Session 4:
Panel Discussion "Future of quantum-field measurements"
Moderator: Dmitri Denisov + All Speakers

6:00 pm - Closing Remarks

6:10 pm - Reception *Invitation Only

Letter of Intent

Recent observations of the universe by various means together with experiments with particle accelerators have yielded a great deal of surprising features of the universe. To explore the quantum nature of the universe, new plans are now underway utilizing quantum field technology for observations.
In Japan, the International Center for Quantum-Field Measurement Systems for Studies of the Universe and Particles (QUP) was newly established in 2021 at KEK, an internationally leading accelerator research institute. The target is to explore the quantum universe by building the science of quantum field measurement systems. In this Forum, pioneering researchers from Japan and the U.S. will focus on various attempts to "taste" the quantum field universe by new means.
After a keynote speech by QUP Director, Masashi Hazumi, the planned observation of cosmic microwave background (CMB) on the ground and in space using low-temperature quantum detectors, and the new attempts applying new quantum field techniques to detect the dark matter, still to be identified, will be introduced in the session and there will be a discussion of the future direction and Japan-U.S. cooperation on this field. We will also point out that the technology developed in this way will contribute to the future society and discuss future research directions.