

Program of Virtual QBIC Workshop 2021

October 13, 2021, Wednesday - Main Session (TUS session 1)

- 10:00 ~ 10:05 *Opening Address* (Tokyo University of Science, Japan)
- 10:10 ~ 10:55 F. Hiai, Emeritus Professor, Tohoku University, Japan
Sandwiched Rényi divergences in operator algebras
- 11:00 ~ 11:45 S. Oryu, Emeritus Professor, Tokyo University of Science, Japan
Transversal Study from Atom-Molecular to Quark-gluon Systems by the GPT Potential
- 11:45 ~ 12:55 **Lunch Break and Poster Presentatio**
- 12:55 ~ 13:40 K. Sanaka, Tokyo University of Science, Japan
Stimulation of polarization entangled photons using passive optical components
- 13:45 ~ 14:15 M. Kihara and S. Iriyama, Tokyo University of Science, Japan
Mathematical Framework of Verifiable Encryption and Its Application
- 14:20 ~ 14:50 K. Jimbo and S. Iriyama, Tokyo University of Science, Japan
Note on Mathematical Framework of Strongly Asymmetric Public Key Agreement and Advantages Based on Its Asymmetry and Non-Commutativity

October 13, 2021, Wednesday - Main Session (International session 1)

VIDEO PHOTO 1

- 15:00 ~ 15:10 *Opening Address* (H. Takayanagi, Vice-Rector, Director of RIST, Tokyo University of Science, Japan)
- 15:15 ~ 15:45 D. Chruscinski, Nicolaus Copernicus University, Poland
A Lecture dedicated to the memory of Professor Andrzej Kossakowski
- 15:50 ~ 16:40 L. Accardi, Roma II University, Italy
The Quantum Markov-Dobrushin Inequality

(Change to 14 of October, 2021)

- *16:50 ~ 17:40 F. Mukhamedov, The United Arab Emirates University, U.A.E.
Kadison-Schwarz operators and their applications
- 17:45 ~ 18:35 M. Regoli, Roma II University, Italy
An analytical assessment of quantum cryptography

October 14, 2021, Thursday - Main Session (TUS session 2)

- 10:00 ~ 10:45 J.S. Tsai, Tokyo University of Science & RIKEN, Japan
Superconducting quantum information: recent progress in our lab
- 10:50 ~ 11:35 S. Tarucha, RIKEN, Japan
Fault tolerant quantum gates in Si
- 11:35 ~ 12:35 **Lunch Break and Poster Presentation**
- 12:05 ~ 12:35 **Poster Presentation (Breakout Room in Zoom)**
- 12:35 ~ 13:20 N. Watanabe, Tokyo University of Science, Japan
A Note on Complexity for Compound Quantum Systems
- 13:25 ~ 14:10 T. Matsuoka, Suwa University of Science, Japan
On quantum mutual entropies
- 14:15 ~ 14:55 T. Kamizawa, Tokyo University of Science, Japan
An Observation on Matrix Continued Fractions and Approximations of Matrices
- 15:00 ~ 15:50 K.B. Sinha, J.N. Centre for Advanced Scientific Research and Indian Statistical Institute, Bangalore, India
Sufficient Statistic in Quantum Probability

October 14, 2021, Thursday - Main Session (International session 2)**# VIDEO PHOTO 2**

- 16:00 ~ 16:50 A. Jamiolkowski, Nicolaus Copernicus University, Poland
On the resource theory and channel-state duality
- 16:55 ~ 17:45 A. Khrennikov, Linnaeus University, Sweden,
Fröhlich Condensation in bio, eco, and social systems: the quantum-like approach
- 17:50 ~ 18:40 D. Chruscinski, Nicolaus Copernicus University, Poland
Universal Constraint for Relaxation Rates for Quantum Dynamical Semigroup
- *(Change Program)**
- 18:50 ~ 19:40 F. Mukhamedov, The United Arab Emirates University, U.A.E.
Kadison-Schwarz operators and their applications

October 15, 2021, Friday - Main Session (TUS session 3)

- 10:00 ~ 10:45 M. Yoshida, Kanagawa University, Japan
S. Kawasaki, Iwate University, Japan
On a formulation of Cauchy relativistic quantum field theory
- 10:50 ~ 11:35 H. Saigo, Nagahama Institute of Bio-Science and Technology, Japan
Quantum Fields as Category Algebras
- 11:35 ~ 12:40 **Lunch Break**
- 12:40 ~ 13:25 K. Kuchitsu, Tokyo University of Science, Japan
Towards the understanding of the information processing system in plants
- 13:30 ~ 14:15 S. Watabe, Tokyo University of Science, Japan,
Scaling Hypothesis of Spatial Search on Fractal Lattice Using Quantum Walk
- 14:20 ~ 15:10 D. Wanke, Ludwig-Maximilians-Universität München, Germany
A sharper image on the local coding and decoding in transcriptional regulation by upscaling the input data

October 15, 2021, Friday - Main Session (International session 3)

- 15:20 ~ 16:10 I. Volovich, Steklov Mathematical Institute, Russia
Black holes information paradox and entanglement entropy islands
- 16:15 ~ 17:05 S. Kozyrev, Steklov Mathematical Institute, Russia
Vibrons and quantum feedback control
- 17:10 ~ 18:00 S. Lakaev, Samarkand State University, Uzbekistan
On ground and excited states of the two-particle Schrödinger operators on lattices.