Program of ICQBIC’11

March 7, 2011, Monday - Main Session (1)

13:20  ~  M. Ohya, Opening Address
13:30  ~  A. Fujishima, President of Tokyo University of Science, Japan
13:40  ~  14:20  I. Volovich, Steklov, Mathematical Institute, Russia
  Quantum Photosynthesis and Entropy Decreasing
14:20  ~  15:00  A. Jamiołkowski, Nicolaus Copernicus University, Poland
  On Effective Methods in Investigation of Quantum Operations and Processes
15:00  ~  15:15  Coffee Break
15:15  ~  15:55  A. Majewski, University of Gdańsk, Poland
  On the Structure of Positive Maps
15:55  ~  16:35  A. Arai, Hokkaido University, Japan
  Mathematical Aspects of Conserved Quantities in a General Class of Quantum Systems
16:35  ~  16:50  Coffee Break
16:50  ~  17:20  M. Michalski, Nicolaus Copernicus University, Poland
  Nonlinear Methods in Entanglement Detection
17:20  ~  17:50  Y. Shikano, Tokyo Institute of Technology, Japan
  Counter-factual Phenomena in Quantum Mechanics
17:50  ~  18:20  S. Iriyama and M. Ohya, Tokyo University of Science, Japan
  Computational Complexity of Quantum Algorithm for Factoring and Partial Recursive Functions
18:30  ~  Welcome Party
March 8, 2011, Tuesday - Main Session (2)

9:30 ~ 10:10 L. Accardi, Roma II University, Italy
Markov Semigroups Associated to Infinitely Divisible Processes

10:10 ~ 10:50 V. Belavkin, Nottingham University, U.K.
An Introduction into Modular Theory of Entanglement and Information

10:50 ~ 11:05 Coffee Break

11:05 ~ 11:45 H. Kamimura, Tokyo University of Science, Japan
Is the Proton-Induced Conduction in Hydrogen-Bonded Systems Classical or Quantum-Mechanical?

11:45 ~ 12:25 I. Ojima, Kyoto University, Japan
QFT and Hadronic World as Dynamical Bases of Natural History

12:25 ~ 13:15 Lunch Break

13:15 ~ 13:55 M. Suzuki, Tokyo University of Science, Japan
Entropy Production and Non-equilibrium Steady States

13:55 ~ 14:35 Shao-Ming Fei, Capital Normal University, China
Quantum Entanglement and Distillation in Information Processing

14:35 ~ 14:50 Coffee Break

14:50 ~ 15:20 T. Matsuoka, Tokyo University of Science, Suwa, Japan
Sufficiency on Wandering Sub-Algebras

15:20 ~ 15:50 D. Chruscinski, Nicolaus Copernicus University, Poland
Non-Markovian Quantum Evolution

15:50 ~ 16:20 M. Regoli, Roma II University, Italy
How Can Steganography be an Interpretation of the Redundancy in pre-mRNA Ribbon?

16:20 ~ 16:35 Coffee Break

16:35 ~ 17:05 J. Jurkowski, Nicolaus Copernicus University, Poland
On Numerical Ranges of Operators

17:05 ~ 17:35 A. Trushechkin, Steklov Mathematical Institute, Russia
Micro- and Macrostructures, Boltzmann Equation and Functional Mechanics
March 9, 2011, Wednesday - Main Session (3)

9:30  ~  10:10  W. Freudenberg, Brandenburg Techn. University Cottbus, Germany
A Classical Markov Chain in the Process of Recognition

10:10  ~  10:50  K-H. Fichtner, L. Fichtner, Friedrich Schiller University Jena, Germany
High Density Limits of Brain Measurements

10:50  ~  11:05  Coffee Break

11:05  ~  11:35  K. Inoue, Tokyo University of Science, Yamaguchi, Japan
Internal Noise Caused by the Memory

11:35  ~  12:15  Si Si, Aichi Prefectural University, Japan
A New Noise Depending on a Space Parameter and Its Application

12:15  ~  13:15  Lunch Break

13:15  ~  13:55  F. Fidaleo, Roma II University, Italy
Markov Chains on Quasi Local Algebras

13:55  ~  14:35  Un Cig Ji, Chungbuk National University, Korea
Quantum White Noise Derivatives and Their Applications

14:35  ~  14:50  Coffee Break

14:50  ~  15:20  T. Ando, Georgia Institute of Tech., USA
Crowding and Hydrodynamic Interactions Likely Dominate in Vivo
Macromolecular Motion

15:20  ~  15:50  R. Belavkin, Middlesex University, UK
Minimum of Information Distance Criterion for Optimal Control of Mutation Rate in Evolutionary Systems

15:50  ~  16:05  Coffee Break

16:05  ~  16:35  G. Adenier, Tokyo University of Science, Japan
Multiple-Photon Absorption Attack on Entanglement-Based Quantum Key Distribution Protocols

16:35  ~  17:05  Y. Kwon, H. Sugawara, S. Shimizu, S. Miyazaki, Tokyo University of Science, Japan
A Novel Measure for Finding Disease-specific Genes from the Biomedical Literature
March 10, 2011, Thursday - Main Session (4)

10:30 ~ 12:00 Y. Togawa, Tokyo University of Science, Japan
   Tutorial I of QBIC – Mathematics for Chaos –
12:00 ~ 13:00 Lunch Break
13:00 ~ 14:30 M. Asano, Tokyo University of Science, Japan
   Tutorial II of QBIC – Mathematical Physics for Cognitive Systems –
14:30 ~ 14:45 Coffee Break
14:45 ~ 17:00 Free Discussion
March 11, 2010, Friday · Main Session (5)

9:30 ~ 10:10  P. v.d. Straten, Universiteit Utrecht, Netherlands  
An Intimate Gathering of Bosons

10:10 ~ 10:50  O.G. Smolyanov, Moscow State University, Russia  
Some Rigorous Models of Irreversibility in Statistical Mechanics

10:50 ~ 11:05  
Coffee Break

11:05 ~ 11:45  H. Nakano, NTT Basic Research Laboratories, Japan  
Energy Flow and Information Flow in Qubit Measurement Process

11:45 ~ 12:15  S. Furuichi, Nihon University, Japan  
Skew Information, Uncertainty Relation and Trace Inequality

12:15 ~ 13:00  
Lunch Break

13:00 ~ 13:10  
Conference Photo

13:10 ~ 14:10  
Poster Session (Question and Answer)

14:10 ~ 14:50  D. Petz, Technical University of Budapest, Hungary  
Efficient Quantum Tomography and Complementarity

14:50 ~ 15:20  T. Hara, K. Sato and M. Ohya, Tokyo University of Science, Japan  
Entangled Sequence Alignment and Its Application for BioSciences

15:20 ~ 15:35  
Coffee Break

15:35 ~ 16:05  D. Wanke, University of Tuebingen, Germany  
Deciphering DNA · Transcription Factor · Interactions: New Views on Old Topics

16:05 ~ 16:35  W. Im, The University of Kansas, U.S.A.  
Information Theory Transfer Entropy: Causality of Correlated Motions from Molecular Dynamics Simulations

16:35 ~ 17:05  A. Accardi, Weill Cornell Medical College, U.S.A.  
Hunting for Quantum Effect in Membrane Transporters

17:05 ~ 17:20  
Coffee Break

17:20 ~ 17:50  T. Obayashi, Tohoku University, Japan  
How to Measure the Similarity of Gene Expression

17:50 ~ 18:20  N. Watanabe, Tokyo University of Science, Japan  
On Treatment of Gaussian Communication Process by Quantum Entropies

18:30 ~  
Banquet
March 12, 2011, Saturday - Main Session (6)

9:30 ~ 10:10  T. Hida, Emeritus Professor, Nagoya University, Japan  
                 Renormalizations in White Noise Analysis and Applications

10:10 ~ 10:50  S. Miyazaki and R. Belavkin, Tokyo University of Science, Japan & Middlesex University, UK  
                 The Computational Genome Sequence Analysis

10:50 ~ 11:05  Coffee Break

11:05 ~ 11:45  I. Yamato, Tokyo University of Science, Japan  
                 From Protein Structure / Function Toward in Silico Biology

11:45 ~ 12:25  K. Kuchitsu, Tokyo University of Science, Japan  
                 Signaling Network of Environmental Sensing and Adaptation in Plants

12:25 ~ 13:25  Lunch Break

13:25 ~ 14:05  A. Khrennikov, University of Växjö, Sweden  
                 Contextual-Adaptive Dynamical Models in Microbiology and Neurofinances

14:05 ~ 14:35  I. Basieva, Russia Academy of Science, Russia  
                 Mathematical Modeling of Quantum Gates in Interacting Particles

14:35 ~ 14:50  Coffee Break

14:50 ~ 15:50  M. Ohya, Tokyo University of Science, Japan  
                 Five Years of QBIC

15:50 ~ 16:05  Coffee Break

16:05 ~  
                 Round Table

                 Future of QBIC Chaired by M. Ohya
March 13, 2011, Sunday – Satellite Session (S1) - Quantum Like Model -

10:00 ~ 10:45  A. Khrennikov, University of Växjö, Sweden
    *Quantum Like Model I*

10:45 ~ 11:30  I. Yamato, Tokyo University of Science, Japan
    *Strong Correlation Phenomena in Biology*

11:30 ~ 13:00  **Lunch Break**

13:00 ~ 13:45  K-H. Fichtner and W. Freudenberg, Friedrich Schiller University Jena, Germany
    and Brandenburg Technical University Cottbus, Germany
    *Quantum Like Model III and Brain Model*

13:45 ~ 14:30  M. Asano, Tokyo University of Science, Japan
    *Quantum Like Model IV*

14:30 ~ 14:45  **Coffee Break**

14:45 ~ 16:30  Y. Tanaka, M. Asano and M. Ohya, Tokyo University of Science, Japan
    *Perfect Quantum Teleportation for Nonmaximal Entangled States*

16:30 ~
    **Round Table**
    *Chaired by L. Accardi, A. Khrennikov, M. Ohya, I. Volovich*
March 14, 2011, Monday – Satellite Session (S2-A) – Workshop on Information Security

11:00 ~ 11:15  M. Ohya, Tokyo University of Science, Japan
  Opening
11:15 ~ 12:15  L. Accardi, Roma II University, Italy
  A New Class of Asymmetric Algorithms
12:15 ~ 13:30  Lunch Break
13:30 ~ 14:00  L. Accardi, Roma II University, Italy
  A New Class of Symmetric (stream) Algorithms
14:00 ~ 14:40  M. Regoli, Roma II University, Italy
  Crypto-steaganography: a New Type of Cryptographic Algorithm
14:40 ~ 15:00  Coffee Break
15:00 ~ 16:00  L. Accardi, S. Iriyama, M. Ohya and M. Regoli, Roma II University, Italy and Tokyo University of Science, Japan
  Technical Session: Demo and Software Implementation
16:00 ~ 17:00  Discussion
March 14, 2011, Monday – Satellite Session (S2-B) - WNA and QC -

10:00 ~ 11:00  L. Streit, BiBoS, Univ. Bielefeld, Germany
Self-Avoiding Polymer Configurations · An Extension of the Edwards Model

11:00 ~ 11:45  T. Hida, Emeritus Professor, Nagoya University, Japan
Space · Time · Noise

11:45 ~ 13:00  Lunch Break

13:00 ~ 13:45  I. Ojima, Kyoto University, Japan
Micro-Macro Duality and Quadrality Scheme

13:45 ~ 14:30  T. Hida, Emeritus Professor, Nagoya University, Japan
Revisiting the Dawning of the White Noise Analysis

14:30 ~ 14:45  Coffee Break

14:45 ~ 15:30  S. Oryu, Tokyo University of Science, Japan
The Three-body Coulomb Scattering Problem by the Mathematically Rigorous Approach in the Momentum Space

15:30 ~ 16:15  N. Watanabe, Tokyo University of Science, Japan
A Construction of Quantum Logical Gate Based on Symmetric Fock Space

16:15 ~ 17:00  Y. Hirota, Tokyo University of Science, Japan
Geometric Approach to Quantum Mutual Entropy