

The 1st Joint Workshop Nanyang Technological University and Osaka University on Fundamental Science



28-29th September
2017

Nanyang Technological University (NTU) and Osaka University (OU) are taking initiatives for increasing research collaboration in all fields of the fundamental sciences. Further collaboration will also make possible the start of a dual-degree program for doctoral students of the two universities. In this first workshop of a series, topics in Mathematics, Physics, Chemistry, and Biology will be discussed.

PROGRAM

Parallel Session 1 Mathematics		Venue: Room E404
Thursday, 28th September 2017		
09:00-09:30		Opening remarks & Coffee
09:30-10:00	Chaoping Xing (NTU)	On torsion limit of Jacobian varieties over finite fields
10:10-10:40	Seidai Yasuda (OU)	Existence of a tamely rational function on a curve
10:50-11:20	Viet Ha Hoang (NTU)	Numerical Solutions of Stochastic Partial Differential Equations
11:30-12:00	Haruya Mizutani (OU)	Eigenvalue and eigenfunction bounds for multidimensional Schrödinger operators
12:00-13:30		Lunch break
	Short talks (10-15min.)	
13:30-	Gaku Hoshino (OU)	Analytic smoothing effect for the nonlinear Schrödinger equations without square integrability
13:50-	Kotaro Kawatani (OU)	Root systems and derived categories
14:10-	Hiroaki Nakamura (OU)	Chebyshev type polynomials with XY-skeletons
14:30-15:00		Coffee break
15:00-15:30	Gary R.W. Greaves (NTU)	On algebraic integers and combinatorial objects
15:45-16:15	Hiroshi Sugita (OU)	Secure pseudorandom generator for Monte Carlo integration
16:30-17:00	Li Lian Wang (NTU)	High-order simulations of wave scattering problems
Parallel Session 2 Physics		Venue: Room H701
Thursday, 28th September 2017		
09:00-09:10	Masayuki Asakawa (OU)	Opening remarks
09:10-09:40	Rainer Dumke (NTU)	Superconducting atom chips: towards quantum hybridization
09:40-10:10	Yasuhiro Niimi (OU)	Spin current as a probe to detect spin dynamics
10:10-10:30		Coffee break
10:30-11:00	Mikito Koshino (OU)	Physics of topological nodal semimetals
11:00-11:30	Pinaki Sengupta (NTU)	Strange correlations in Symmetry Protected Topological phases
11:30-13:00		Lunch break
13:00-13:30	Setsuko Tajima (OU)	Electron-hole asymmetry in a doped Mott insulator: Revisit the cuprate phase diagram
13:30-14:00	Bent Weber (NTU)	Quantum Electronic Devices at the Atomic Limit
14:00-14:10		Coffee break
14:10-14:40	Hiroshi Murakawa (OU)	Enhancement of magnetoresistance in a molecular conductor and a binary semimetal
14:40-15:10	Siew Ann Cheong (NTU)	From the Knowledge of Physics to the Physics of Knowledge
15:10-15:30		Discussions for future collaboration
Friday, 29th September 2017		
		Lab visit
Parallel Session 3 Chemistry and Biology		Venue: Room F608
Thursday, 28th September 2017		
09:00-09:10	Takashi Kubo (OU)	Opening remarks
MORNING SESSION (BIOLOGY)		
09:10-09:35	Zbynek Bozdech (NTU)	Malaria: the re-emerging infectious agent as a global threat
09:35-10:00	Tatsuo Kakimoto (OU)	Regulatory mechanisms for plant development: intercellular communication and transcriptional regulation
10:00-10:25	Andrew Tan (NTU)	An overview of the roles of angiotensin-like 4 in metastasis and inflammation-associated pulmonary damage
10:25-10:35		Coffee break
10:35-11:00	Sakiko Shiga (OU)	Neurobiological study of the seasonal timing system in insects
11:00-11:25	Cheng Gee Koh (NTU)	POPX2 phosphatase exhibits dual regulatory functions in cancer metastasis
11:25-11:50	Kotaro Kimura (OU)	The molecular mechanism for decision-making revealed from worms
11:50-13:00		Lunch break
13:00-13:20	Cheng Gee Koh (NTU)	Introduction of NTU
AFTERNOON SESSION (CHEMISTRY)		
13:20-13:45	Weng Kee Leong (NTU)	Research in the EM Clusters Laboratory
13:45-14:10	Takuya Matsumoto (OU)	Time-resolved electrostatic force microscopy towards imaging of electron transfer between molecules
14:10-14:35	Xing Yi Ling (NTU)	Using Nanoparticle-assembled Fluid-Fluid Interfaces to Reveal Chemical Reactions at Molecular Level
14:35-15:50		Coffee break
15:50-15:15	Naoto Ishikawa (OU)	Coupling of 4f electrons and Photo-Excited Cyclic n electrons in Single Molecule Magnets
15:15-15:40	Gang Chen (NTU)	Studying RNA mechanical unfolding dynamics using optical tweezers and targeting RNA structures with chemically-modified dsRNA-binding PNAs
15:40-16:05	Kazuhiko Nakatani (OU)	Regulation of -1 Ribosomal Frameshifting by Small Molecules
16:05-16:15	Xing Yi Ling (NTU)	Closing remarks
16:15-17:00		Discussions for future collaboration

SCIENTIFIC ORGANIZING COMMITTEE

Mathematics: Hiroaki Nakamura (OU) and Chaoping Xing (NTU)
Physics: Mikihiro Koshino (OU) and Rainer Dumke (NTU)
Chemistry & Biology: Takashi Kubo (OU) and Gang Chen (NTU)

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CO-CHAIRING THE WORKSHOP

Setsuko Tajima, Dean of Graduate School of Science (OU)
Yeow Meng Chee, Chair of School of Physics and Mathematical Science (NTU)

LOCAL ORGANIZING COMMITTEE

Yoshitaka Kuno (Chair), Takashi Kubo, Luca Baiotti, Yonsoo Tak

*NOTE: This program is subject to change. Please access to our website for the details.