

## International Workshop on “Fundamental Problems in Mathematical and Theoretical Physics”

Date: July 16 – July 21, 2018

Venue: Large Conference Room, 1st Floor, 55N Bldg., Waseda University, Nishi-Waseda Campus  
早稲田大学 西早稲田キャンパス 55号館 N棟 1階 大会議室

### Part I. Quantum Physics

July 16, Monday

- 09:15 – 10:45 Kouichi Semba (National Institute of Information and Communications Technology (NICT), Tokyo)  
Light-Matter Interaction beyond ‘Strong Coupling’ in Circuit Quantum Electrodynamics
- 11:00 – 12:30 Takao Aoki (Waseda University, Tokyo)  
Coupled-Cavities Quantum Electrodynamics
- 14:45 – 16:15 Saverio Pascazio (University of Bari, Italy)  
Entanglement Generation and Bound States in One-Dimensional QED
- 16:30 – 18:00 Yasunobu Nakamura (University of Tokyo, Tokyo)  
Microwave Single Photon Detectors

July 17, Tuesday

- 10:45 – 11:45 Paolo Facchi (University of Bari, Italy) **Minicourse**  
Quantum Boundary Conditions I
- 12:00 – 12:30 Paolo Abiuso (Scuola Normale Superiore, Pisa, Italy)  
Quantum Thermal Machines: Control and Non-Markovianity
- 14:45 – 16:15 Daniel Burgarth (Aberystwyth University, UK)  
Quantum Control in Infinite Dimensions
- 16:30 – 18:00 Paolo Facchi (University of Bari, Italy) **Minicourse**  
Quantum Boundary Conditions II

July 18, Wednesday

- 10:30 – 12:30 Paolo Facchi (University of Bari, Italy) **Minicourse**  
Quantum Boundary Conditions III

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### Part II. Mathematical Physics

July 18, Wednesday

14:45 – 16:15 Rémi Carles (Montpellier University), **Minicourse I**  
Universal dynamics for the logarithmic Schrödinger equation I

16:30 – 18:00 Marcello D'Abbico (University of Bari), **Minicourse I**  
Critical exponents for higher order dissipative evolution equations I

July 19, Thursday

10:30 – 12:00 Marcello D'Abbico (University of Bari), **Minicourse II**  
Critical exponents for higher order dissipative evolution equations II

13:00 – 13:40 Masayuki Hayashi (Waseda University)  
Variational approach for the nonlinear Schrödinger equation with derivative

13:50 – 14:30 Gaku Hoshino (Osaka University)  
Dissipative nonlinear Schrödinger equations for large data

14:40 – 15:20 Hayato Miyazaki (National Institute of Technology, Tsuyama College)  
The initial value problem for the generalized KdV equation with low degree of non-linearity

16:00 – 17:30 Rémi Carles (Montpellier University), **Minicourse II**  
Universal dynamics for the logarithmic Schrödinger equation II

July 20, Friday

- 10:30 – 12:00 Marcello D'Abbicco (University of Bari), **Minicourse III**  
Critical exponents for higher order dissipative evolution equations III
- 13:30 – 15:00 Rémi Carles (Montpellier University), **Minicourse III**  
Universal dynamics for the logarithmic Schrödinger equation III
- 15:40 – 16:30 Masahiro Ikeda (Center for Advanced Intelligence Project, RIKEN)  
Sharp estimate of lifespan to semilinear damped wave equation  
with an effective time-dependent damping
- 16:40 – 17:30 Motohiro Sobajima (Tokyo University of Science)  
On lifespan for two dimensional semilinear heat equation in exterior domain
- 18:00 – Reception at Large Conference Room

July 21 , Saturday

- 14:00 – 15:00 Neal Bez (Saitama University)  
Strichartz estimates for orthonormal systems of initial data
- 15:30 – 16:30 Kenji Yajima (Gakushuin University)  
(673<sup>rd</sup> Applied Analysis Seminar, 第 673 回 応用解析研究会)  
Schrödinger operators with point interactions in two and three dimensions--  
Threshold singularities and  $L^p$ -boundedness of wave operators

This workshop is a part of "Special Lecture on Quantum Physics".

このワークショップは量子物理学特別講義「Special Lecture on Quantum Physics」を兼ねています。

Organized by Hiromichi Nakazato, Tohru Ozawa, Kazuya Yuasa

Supported by Top Global University Project, Waseda University / Institute of Mathematical Fluid Dynamics, Waseda University