Quantum computing: current status and prospects
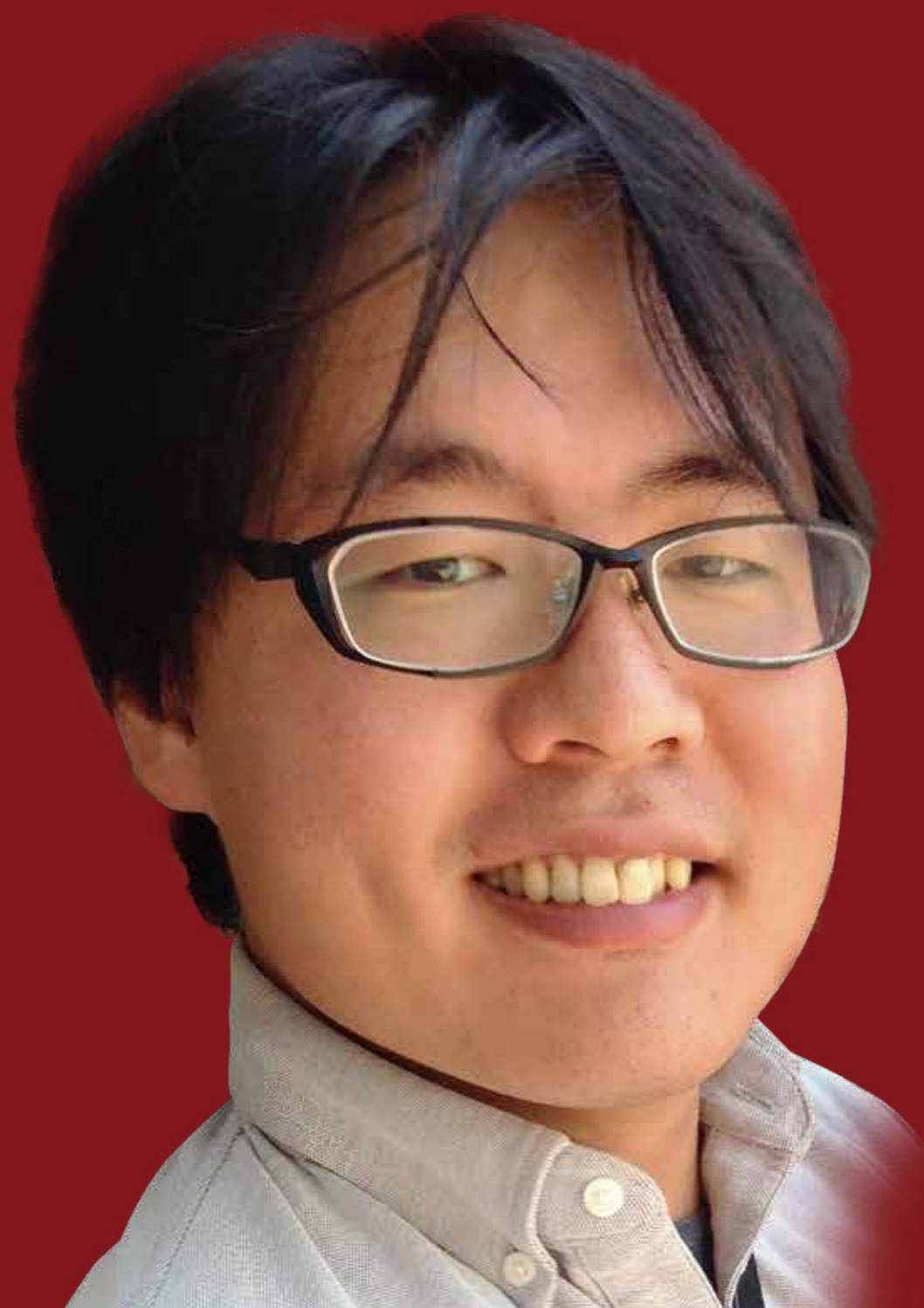
Prof. Keisuke Fujii
(Kyoto University)

2019 **4/25** 15:00 – 16:30

Suzuki Umetaro Hall
RIKEN Wako Campus

R-CCS R511, Kobe
SUURI-COOL (Kyoto)
SUURI-COOL (Sendai)

Supported by extensive experimental efforts for realization of quantum computing devices, quantum computers of a hundred qubits are now within reach in the near future. This level of a quantum computer is not enough for fully fledged fault-tolerant quantum computing, but is still expected to have computational advantage against classical computers. Such a noisy intermediate scale quantum computing (NISQ) device is thought to be a testbed for proof-of-principle experiments of quantum algorithms and verification of quantum physics in the limit of extremely high complexity. In this talk, I will provide a general introduction to quantum computing starting from how and for what quantum computers work. Then I will provide an overview of the current status and prospects of the field of quantum computing. As the final part, I will also talk about our own activities on quantum-classical hybrid algorithm, which is a kind of quantum algorithms specifically designed for the NISQ devices.

Access Map

RIKEN iTHEMS
RIKEN interdisciplinary Theoretical & Mathematical Sciences

https://ithems.riken.jp/colloquium