

Research Report (April, 2020- March, 2021)

Enrollment from
April 2020

Department of physics and applied physics

Takayuki Suzuki

I. List of Papers

II. List of Talks

1. "Noise suppression for quantum annealing with XY interaction" 76th Annual Meeting, The Physical Society of Japan (2020/09/8-11)
2. "A proposal of noise suppression for quantum annealing" SGU Special Online Seminars/Lectures on Quantum Physics (2020/07/18)
3. "Implementation of Multi-body Interaction for Quantum Annealing" (Poster) 20th Asian Quantum Information Science Conference (2020/12/7-9)

III. Research Results in AY2020

I proposed a method of noise suppression for quantum annealing. I also proposed a method for realizing many-body interactions in quantum annealing and quantum approximate optimization algorithm which is one of the algorithms for quantum computers.

IV. Research Plan for AY2021

I will propose a method to suppress a different kind of noise from the one I have considered so far, which is more realistic.

I will also present a non-perturbative analysis of the multi-level Landau-Zener(LZ) model. This will allow us to extend analysis with the LZ model to multi-level LZ model. I plan to approach the LZ problem in open systems by applying the analysis.