Journal of Integrated Creative Studies

## **Report on my first three months at the Yukawa Institute for Theoretical Physics**

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**Abstract.** This is a report on my first three months as an Advanced Future Studies Senior Lecturer at the Yukawa Institute for Theoretical Physics. I describe my scientific activities during this period.

Keywords: Fault tolerant quantum computing, topological quantum error correction

## **1. Scientific Activity**

I started working at the Yukawa Institute for Theoretical Physics on January 2016. What follows is an account of my scientific activities during the period extending to March 2016.

During this three months I have participated in several conferences and workshops, as follows:

- YITP Workshop on Quantum Information Physics, Kyoto, Japan, January 2016. In this workshop I gave an invited talk with the title "Local Operations, Topological Order and Fault-tolerant Quantum Computation".
- International Symposium on Advances Future Studies, Kyoto, Japan, February 2016. In this meeting I gave a talk with the title "Topological Quantum Error Correction".
- Advances in Quantum Algorithms and Computation, Aspen, USA, March 2016. In this conference I gave an invited talk with the title "Time-correlated noise in quantum computation".

In addition, in March I visited the California Institute of Technology (Caltech) invited by Professor John Preskill. During this visit I gave a seminar with the title "Time-correlated noise in quantum computation", and I was able to interact fruitfully with the students and postdocs in Preskill's group, and with Professor Alexei Kitaev. Moreover, during this visit I also gave the same seminar in the University of Southern California, where I was invited by Professor Daniel Lidar. There I was able to interact with the students and postdocs in his group and with Professor Paolo Zanardi.

## 2. Conclusion

During this three months I have only started what I expect to be a very fruitful time at the Yukawa Institute for Theoretical Physics.