【Research Activity Report 2020】

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■Publications

1) Daniel Burgarth, Paolo Facchi, Hiromichi Nakazato, Saverio Pascazio, and Kazuya Yuasa, "Quantum Zeno Dynamics from General Quantum Operations," Quantum **4**, 289 (2020).

2) Daniel Burgarth, Paolo Facchi, Hiromichi Nakazato, Saverio Pascazio, and Kazuya Yuasa, "Eternal Adiabaticity in Quantum Evolution," Physical Review A **103**, 032214 (2021).

■Presentations

1) Daniel Burgarth, Paolo Facchi, Hiromichi Nakazato, Saverio Pascazio, and Kazuya Yuasa, "KAM-Stability for Conserved Quantities in FiniteDimensional Quantum Systems," 24th Annual Conference on Quantum Information Processing (QIP 2021) (Online, February 1-5, 2021).

■Summary of Research Achievements

1) We have shown that the quantum Zeno dynamics can be induced by frequently applying general quantum operations for general Markovian open quantum systems.

2) We have proved that the adiabatic theorem holds *eternally* for arbitrarily long times for general Markovian open quantum systems.