

# Joint CQSE and CASTS Seminar

2020  
May 29, Friday

TIME May 29, 2020, 2:30~3:30pm  
TITLE Entangling Capacities and the Geometry of Quantum Operations  
SPEAKER Prof. Chung-Hsien Chou  
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PLACE Rm716, CCMS & New Physics Building, NTU

## Abstract

Quantum entanglement is the characteristic trait of quantum mechanics and is a useful resource for quantum information processing. How much entanglement can be generated by a quantum operation, namely entangling capacities, becomes an important issue. In this talk, I will first discuss the existence and exact value of the supremum of logarithmic negativity (and negativity likewise) between any two blocks for a system composed of permutationally symmetric Gaussian modes. I will then introduce the relation between entangling capacities of operations, geometry of operations, and positive partial transposition (PPT) states, which are an important class of states in quantum information. A length that quantifies both entangling capacity/entanglement and PPT-ness of an operation or state can be defined, establishing a geometry characterized by PPT-ness. The distance derived from the length bounds the relative entangling capability, endowing the geometry with more physical significance.

- ▲防疫期間僅限本校人員參與 Open for members of National Taiwan University.
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