

# Joint Seminar – CQSE, CTP, & CASTS

2019  
Nov. 1, Friday

TIME Nov. 1, 2019, 2:30~3:30pm  
TITLE Interactive Leakage Chain Rule for Quantum Min-entropy and its applications  
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PLACE Rm716, CCMS & New Physics Building, NTU

## Abstract

The leakage chain rule for quantum min-entropy quantifies the change of min-entropy when one party gets additional leakage about the information source. Herein we provide an interactive version that quantifies the change of min-entropy between two parties, who share an initial classical-quantum state and are allowed to run a two-party protocol. As an application, we prove new versions of lower bounds on the complexity of quantum communication of classical information. In the task of quantum private information retrieval, we also prove a lower bound on the communication complexity, saying that it is impossible to achieve security in the standard specious model with sub-linear communication even with preshared entanglement.

