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Choi-defined resource theories

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The resource theories of separable entanglement, non-positive partial transpose entanglement, magic, and imaginarity share an interesting property: an operation is free if and only if its renormalized Choi matrix is a free state. We refer to resource theories exhibiting this property as Choi-defined resource theories. We demonstrate how and under what conditions one can construct a Choi-defined resource theory, and we prove that when such a construction is possible, the free operations are all and only the completely resource non-generating operations.

Keyword-1

quantum resource theories

Keyword-2

Choi matrices

Keyword-3

Author: Prof. SCANDOLO, Carlo Maria (University of Calgary)

Co-author: Mr ZANONI, Elia (University of Calgary)

Presenter: Prof. SCANDOLO, Carlo Maria (University of Calgary)

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