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Catalyst assisted Cooling

Cooling qubits is challenging task in the development of quantum computers for practical purposes. We consider a target qubit and a qubit machine assisted by a catalyst to achieve catalytic advantage in the thermodynamic process. We show that using a catalyst, one can achieve catalytic advantage in two ways: a) Extending the regime of operation and b) Better cooling performance as compared to non-catalytic scenario.

Theme

Theme 1. Energy advantage and cost of quantum technology

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Track Classification: Theme 1. Energy advantage and cost of quantum technology