

QUANTUM ENTANGLEMENT AND OPTIMAL CONTROL

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Optimal control theory is a powerful tool for improving figures of merit in quantum information tasks. I will present recent results on applications of optimal control in quantum information processing. Specifically, I will focus on our optimal control protocol whose optimization target is expanded to the whole class of quantum operations known as perfect entanglers. These are quantum operations capable of creating maximally entangled states out of some initial product state. The importance of these results is underlined by the role entangled states play in fundamentally better performance of quantum information processing compared to its classical counterpart.

REFERENCES

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