Hardware and Protocol Optimization in Quantum-Repeater Networks

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Propositions

accompanying the dissertation

Hardware and Protocol Optimization in Quantum-Repeater Networks

by

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1. Simulations of quantum networks will play a significant role in the design, development and deployment of actual quantum networks.
2. If one is interested in the practical development of quantum networks, application-derived performance metrics are more useful than ones derived from information theory.
3. Tailoring entanglement generation and distribution protocols to available hardware is crucial for the performance of near-term quantum networks.
4. Striking a balance between accuracy and breadth of applicability is a major challenge in the modelling of complex systems.
5. The PhD system encourages selfish behavior and contributes to sunk-cost anxieties. As such, it should be reevaluated and reformed.
6. Science funding agencies should employ evidence-based, scientific methods to improve allocation of grant money.
7. Incentive-based system analyses, i.e., systematic studies of how incentives (such as rewards or punishments) within a system influence the behavior of its participants, are useful in identifying potential systemic issues.
8. Misaligned incentives do not justify unethical behavior.
9. Reading digital media can result in faster comprehension than reading in print, assuming the potentialities of the former are used to the fullest.
10. Propositions of the type ”My hobby is fun” (e.g., ”Tennis is a great sport”) are dull.

Propositions 1, 2 and 3 pertain to this thesis.

These propositions are regarded as opposable and defendable, and have been approved as such by the promotors prof. dr. S.D.C. Wehner. and prof. dr. ir. R. Hanson.