

Peer Review

Review of: "Fundamental Issues and Measurement Problem in Quantum Mechanics"

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This article presents a well-motivated and technically sound approach to adaptive routing in meshed quantum key distribution (QKD) networks using deep reinforcement learning (DRL). The authors address a central challenge in practical QKD networking: efficient utilization and load balancing of scarce key resources in dynamic, repeater-less topologies—where conventional shortest-path routing is known to perform poorly.

A key strength of the work is the use of Graph Attention Networks (GATs) within a PPO-based DRL framework, enabling the agent to generalize across unseen network topologies of varying sizes without retraining. The entropy-based reward function is physically meaningful and well aligned with the objective of maintaining balanced key store filling levels across the network. The training methodology is clearly described, and the simulation setup is realistic, incorporating time-varying traffic, key regeneration, and heterogeneous demand.

Declarations

Potential competing interests: No potential competing interests to declare.