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Title: **Temporal Quantum Steering in the Cloud**

Abstract:

Quantum steering is a pivotal correlation in quantum information theory. It allows one party (Alice) to remotely steer another party (Bob) by her choice of measurements. Not only many experimental realizations of quantum steering have been demonstrated, but also various theoretical applications, such as quantum foundations and one-sided device independent quantum information tasks are proposed. Apart from the spatial quantum steering, a temporal analogue of quantum steering was also developed recently. In this talk, I will introduce the theory of temporal quantum steering and describe its role among various temporal quantum correlations. Furthermore, I will also illustrate some applications of temporal quantum steering in cloud quantum computers, including benchmarking quantum state transfer, steering heat engine, and the enhanced quantum metrology.