

Abstract Submitted
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Quantum Steering as a Quantum Game¹ SAI VINJANAMPATHY, JING-LING CHEN, MILE GU, National University of Singapore, L.C. KWEK, National University of Singapore and National Institute of Education and Institute of Advanced Studies, Nanyang Technological University, 1 Nanyang Wa — ”Steerable states” are a subset of entangled states, that contain in them the set of Bell non-local states. A bipartite state shared by Alice and Bob is called steerable if by performing measurements, the ensemble that Alice can produce on Bob’s side is unexplained by any local hidden variable theory. We will provide an operational interpretation of quantum steering by proposing a quantum game. The probability that the players win this game will be related to quantum steering. Furthermore, we will show how the various hierarchies between entanglement, steering and Bell non-locality are preserved by this quantum game.

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