

International Conference on Wave Equations, Optical Engineering and Quantum Mechanics (ICWOQ-2025)

Conference Proceedings

April 26, 2025 - Barcelona, Spain

Criterion for Locally Inaccessible Quantum Nonlocality and Steering

Cristian Edwin Susa Quintero

Department of Physics and Electronics, University of Cordoba, Monteria, Colombia

It is well known that quantum correlations such as quantum nonlocality and steering can be revealed by means of the implementation of local filters or stochastic local operation and classical communication (SLOCC). This means that bipartite quantum states that are entangled but local (unsteerable), can be driven locally to quantum nonlocal (steerable) states. However, there does not exist a criterion telling us whether the revealed quantum correlation is accessible by locally implementing on a single party, or both parties are required to cooperate by implementing local filters. In this work, we proposed a criterion based on the quantum steering ellipsoid and provided examples of two-qubit states with locally inaccessible quantum correlations.