

Rigidity of Quantum Nonlocality in Device-Independent Self-Testing of Qutrit Systems

Saturday, 26 April 2025 14:10 (25 minutes)

The quantum rigidity of Bell nonlocality in device-independent self-testing scenarios for qutrit systems is established using the sum-over-squares method. It is demonstrated that when the quantum upper bound of the generalized Bell inequality is achieved, the underlying entangled state is required to be maximally entangled, and the measurement observables are uniquely specified.

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Session Classification: Afternoon 1