Schmidt number detection under group symmetry

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Quantum entanglement is a fundamental resource in Quantum Computation and Quantum Information Processing, and the Schmidt number is one of the most important entanglement measure quantifying "entanglement dimensionalit". A standard approach to analyze the Schmidt number is to use k-positive maps as witnesses, but efficient witnesses are generally hard to find. In this talk, we propose an efficient method for extracting Schmidt number witnesses for states with compact group symmetry. As an application, we completely characterize the Schmidt number of orthogonally invariant bipartite states, a mixture of Werner and isotropic states.

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