SYMMETRIC ENTANGLED STATES

GEOFFREY PRICE

In quantum information theory the separable pure states on $B(K)$, where $K = \mathbb{C}^k \otimes \cdots \otimes \mathbb{C}^k$, are those corresponding to product vectors $\eta = \eta_1 \otimes \cdots \otimes \eta$ of norm 1, i.e.

$$\phi(x) = \langle x\eta, \eta \rangle \, , x \in B(K)$$

Pure states which are not separable are called entangled. These are the states which admit the possibility of teleportation.

There are various notions of the distance of an entangled pure state from the separable pure states, which give a measure of the degree of entanglement of a state. Here we consider Arveson's "inner radius". By making calculations on the distance of the symmetric pure states from the pure product states we obtain upper bounds on the inner radius.