

Unitary $U: \mathcal{H}_a \otimes \mathcal{H}_e \mapsto \mathcal{H}_b \otimes \mathcal{H}_c$ defines an isometry $J: \mathcal{H}_a \mapsto \mathcal{H}_b \otimes \mathcal{H}_c$

with $J|\psi\rangle = U|\psi\rangle \otimes |e_0\rangle$