1003-81-1518 **David W. Lyons*** (`lyons@lvc.edu`), 101 N. College Avenue, Annville, PA 17003, and **Scott N. Walck** (`walck@lvc.edu`), 101 N. College Avenue, Annville, PA 17003. *Minimum orbit for the local unitary group action on state space for a system of qubits.* Preliminary report.

Quantum entanglement can be thought of as a resource which makes certain algorithms in quantum computation powerful. One approach to the classification of entanglement type is via the local unitary group action; two states have the same entanglement type if they lie on the same orbit. At present there are many open questions and few general results about the classification of orbits. We present a minimum orbit result which gives the maximum possible isotropy subgroup dimension for a system of any number of qubits. (Received October 05, 2004)