

# Miami Physics Conference 2022

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Title: Decoherence and the Classes of Maximally Entangled States

Self-interactions and interaction with the environment tend to push quantum systems toward states of maximal entanglement. This is a definition of decoherence. We argue that these maximally entangled states fall into the well-defined classes that can be uniquely described by the values of certain entanglement invariants. After discussing these ideas we present examples of maximally entangled states for a number of generic systems, construct compact states in the most entangled classes for tripartite systems, and suggest how they may be constructed for other  $n$ -partite systems. We study random walks through the space of entanglement classes to see how decoherence might work in practice.