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Entanglement manipulation and distillability beyond LOCC

When a quantum system is distributed to spatially separated parties, it is natural to consider how the system evolves when the parties perform local quantum operations with classical communication (LOCC). However, the structure of LOCC operations is exceedingly complex leaving many important physical problems unsolved. We consider generalized resource theories of entanglement based on different relaxations to the class of LOCC. The behavior of various entanglement measures are studied under certain classes of non-entangling operations. In an effort to better understand the nature of LOCC bound entanglement, we study the problem of entanglement distillation in these generalized resource theories.