

Abstract Submitted  
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**Optimal Entanglement Transformations Among N-qubit W-Class States**<sup>1</sup> WEI CUI, ERIC CHITAMBAR, HOI-KWONG LO, University of Toronto — We investigate the physically allowed probabilities for transforming one  $N$ -partite W-class state to another by means of local operations assisted with classical communication (LOCC). Recently, Kintaş and Turgut have obtained an upper bound for the maximum probability of transforming two such states [1]. Here, we provide a simple sufficient and necessary condition for when this upper bound can be satisfied and thus when optimality of state transformation can be achieved. Our discussion involves obtaining lower bounds for the transformation of arbitrary W-class states and showing precisely when this bound saturates the bound of [1]. Finally, we consider the question of transforming symmetric W-class states and find that in general, the optimal one-shot procedure for converting two symmetric states requires a non-symmetric filter by all the parties.

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