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*Rigorous results on relative entropies in CFT*

Inspired by Edward Witten's questions, we discuss the mutual information associated with free fermions, and we deduce many results about entropies for chiral CFT's which are embedded into free fermions, and their extensions. Such relative entropies in CFT are here computed explicitly for the first time in a mathematical rigorous way, and our results agree with previous computations by physicists based on heuristic arguments; in addition we uncover a surprising connection with the theory of subfactors, in particular by showing that a certain duality, which is argued to be true on physical grounds, is in fact violated if the global dimension of the conformal net is greater than 1. Based on joint work with R. Longo arxiv. 171207283.