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Multipartite information in conformal field theories

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The mutual information between two subsystems is a well-known information theoretic quantity which, contrary to other measures such as entanglement entropy, remains finite in the continuum limit of quantum field theories. It is possible to generalize it by considering a system made out of N distinct parts, in which case we compute the N -partite information shared by them. In this talk, we will provide some general results for the N -partite information between spatial subregions in the ground state of CFTs: generic behaviour at long distances, relation between bulk and boundary N -partite informations in holographic theories, and lattice computations for a free boson in $2+1$ dimensions, which support the analytical results obtained.

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