DECAY OF CORRELATIONS FOR GIBBS STATES OF LOCAL HAMILTONIANS

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Abstract. The thermal equilibrium properties of many body systems can be described using Gibbs states. It is therefore of great interest to know when such states admit for an easy description. In particular, this is the case if correlations between two distant regions are exponentially decaying in the distance between them. In this talk, we will provide an introductory overview on these concepts in the setting of quantum spin systems with local interactions. In the one-dimensional case, we will present some recent results that relate the exponentially decaying condition for different measures of correlations, as well as some applications.

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