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The energy two-point function in the toric Ising model

We present an on-going joint work with Konstantin Izyurov (University of Helsinki) to study the correlations of the two dimensional critical square lattice Ising model on a torus. We present a general approach to studying the correlations of the model through discrete holomorphic observables, and showcase this method for the energy two-point function. Our goal is to calculate the leading order asymptotics of the energy two-point correlator (that is, the energy two-point function) as the mesh size of the square grid embedded on the torus goes to zero.