The Mean Field Model

Monumental efforts have been invested in the solution of the Ising Model in 3 Dimensions without much progress. The model can be extended to a mean field model that can be solved analytically. There are two ways to go about it, using the approach that baxter uses and another using an inequality called the Bogoliubov inequality and a variational method sakthivadivel_magnetisation_2022. We will outline both of these methods here, starting with the one Baxter solves.