

This thesis studies a way of connecting the notion of maximum cut from discrete mathematics with the Rosenthal Potential introduced by Rosenthal in 1973 and the ground state configuration on the Ising model, a theoretical model designed in 1920 to study macroscopic results of microscopic interaction in statistical physics. The underlying motivation for studying this problem stems from a publication of S. Torquato in 2011, where he proposes applying the Ising model as a tool for analyzing cancer growth. The thesis aims to understand the possible connection between dynamics from statistical physics and their application in games of multi-agent environments.