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Statistical mechanics of human resource allocation[1] JUN-ICHI INOUE, HE CHEN, Hokkaido University — We provide a mathematical platform to investigate the network topology of agents, say, university graduates who are looking for their positions in labor markets. The basic model is described by the so-called Potts spin glass which is well-known in the research field of statistical physics. In the model, each Potts spin (a tiny magnet in atomic scale length) represents the action of each student, and it takes a discrete variable corresponding to the company he/she applies for. We construct the energy to include three distinct effects on the students' behavior, namely, collective effect, market history and international ranking of companies. In this model system, the correlations (the adjacent matrix) between students are taken into account through the pairwise spin-spin interactions. We carry out computer simulations to examine the efficiency of the model. We also show that some chiral representation of the Potts spin enables us to obtain some analytical insights into our labor markets.

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