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Limit distributions of some Markov chains with memory

Abstract

In our previous presentation we have considered Markov chains with memory 2. It is known that the theory of finite Markov chains with positive transition probabilities can be embedded into the theory of limit Gibbs distributions as a trivial particular case, and the Hamiltonians can be considered as a natural generalization of the transition probabilities or, more exactly, of their logarithms [1,2]. To define Markov chains with memory r, we consider model with competing interactions that describes interactions between two cites on distance r.

Using methods theory of limit Gibbs measures we describe for some r limit distributions of some Markov chains with memory r.

1. R. Kindermann, J. Laurie Snell. Markov Random Fields and Their Applications. Contemporary Mathematics, AMS Providence, Rhode Island,1980.

2. Ya. G. Sinai. Theory of phase transitions: Rigorous results. Pergamon Press, Oxford - New York - Toronto - Sydney - Paris - Frankfurt, 1982.