

## Potts Model on Maple Leaf Lattice with Pure Three-Site Interaction

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Abstract: We use Monte Carlo method to study three-state Potts model on maple leaf lattice with pure three-site interaction. The critical behavior of both ferromagnetic and antiferromagnetic cases is studied. Our results confirm that the critical behavior of the ferromagnetic model is independent of the lattice details and lies in the universality class of the three-state ferromagnetic Potts model. For the antiferromagnetic case the transition is of the first order. We have calculated the energy jump and critical temperature in this area. We find there is a tricritical point separating the first order and second order phases for this system.

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Key words: Potts model, maple leaf lattice, Monte Carlo method, transition, critical behavior

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