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Paramagnetic phases of four-state Potts model on a Cayley tree in the presence of competing interactions

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Abstract

We consider a Potts model on a Cayley tree with competing nearest-neighbor and next-nearest-neighbor interactions restricted to spins belonging to the same branch of the tree with four spins and investigate the problem of phase transition for paramagnetic phases of this model.

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(from Web of Science Core Collection)

1. [SERIES STUDIES OF THE 4-STATE POTTS MODEL](#)

By: DITZIAN, RV; KADANOFF, LP

JOURNAL OF PHYSICS A-MATHEMATICAL AND GENERAL Volume: 12 Issue: 9 Pages: L229-L233 Published: 1979

Times Cited: 22

2. [CLASSIFICATION OF ORDER-DISORDER TRANSITIONS IN COMMON ADSORBED SYSTEMS - REALIZATION OF 4-STATE POTTS MODEL](#)

By: DOMANY, E; SCHICK, M; WALKER, JS

PHYSICAL REVIEW LETTERS Volume: 38 Issue: 20 Pages: 1148-1151 Published: 1977

Times Cited: 115

3. [PHENOMENOLOGICAL DISCUSSION OF MAGNETIC ORDERING IN HEAVY RARE-EARTH METALS](#)

By: ELLIOTT, RJ

PHYSICAL REVIEW Volume: 124 Issue: 2 Pages: 346-+ Abstract Number: A1961-14669 Published: 1961

Times Cited: 437

4. **Modulated Phase of a Potts Model with Competing Binary Interactions on a Cayley Tree** Times Cited: 22
By: Ganikhodjaev, N.; Temir, S.; Akin, H.
JOURNAL OF STATISTICAL PHYSICS Volume: 137 Issue: 4 Pages: 701-715 Published: NOV 2009
5. **On Paramagnetic Phases of the Potts Model on a Bethe Lattice in the Presence of Competing Interactions** Times Cited: 1
By: Ganikhodjaev, Nasir; Rahmatullaev, Anasbek
INTERNATIONAL CONFERENCE ON ADVANCEMENT IN SCIENCE AND TECHNOLOGY 2012 (ICAST): CONTEMPORARY MATHEMATICS, MATHEMATICAL PHYSICS AND THEIR APPLICATIONS Book Series: Journal of Physics Conference Series Volume: 435 Article Number: UNSP 012035 Published: 2013
6. **Phase diagram of the three states Potts model with next nearest neighbour interactions on the Bethe lattice** Times Cited: 22
By: Ganikhodjaev, Nasir; Mukhamedov, Farrukh; Pah, Chin Hee
PHYSICS LETTERS A Volume: 373 Issue: 1 Pages: 33-38 Published: DEC 22 2008
7. Title: [not available] Times Cited: 558
By: GEORGII HO
GIBBS MEASURES PHASE Published: 1988
8. **SIMPLE 3-STATE MODEL WITH INFINITELY MANY PHASES** Times Cited: 127
By: HUSE, DA
PHYSICAL REVIEW B Volume: 24 Issue: 9 Pages: 5180-5194 Published: 1981
9. **COMPETING ISING INTERACTIONS AND CHAOTIC GLASS-LIKE BEHAVIOR ON A CAYLEY TREE** Times Cited: 31
By: INAWASHIRO, S; THOMPSON, CJ
PHYSICS LETTERS A Volume: 97 Issue: 6 Pages: 245-248 Published: 1983
10. **PHASE-DIAGRAM OF THE ISING-MODEL ON A CAYLEY TREE IN THE PRESENCE OF COMPETING INTERACTIONS AND MAGNETIC-FIELD** Times Cited: 49
By: MARIZ, AM; TSALLIS, C; ALBUQUERQUE, EL
JOURNAL OF STATISTICAL PHYSICS Volume: 40 Issue: 3-4 Pages: 577-592 Published: 1985
11. **INCOMMENSURATE AND COMMENSURATE PHASES IN ASYMMETRIC CLOCK MODELS** Times Cited: 194
By: OSTLUND, S
PHYSICAL REVIEW B Volume: 24 Issue: 1 Pages: 398-405 Published: 1981
12. Title: [not available] Times Cited: 176
By: PRESTON C
GIBBS STATES COUNTAB Published: 1974
13. **The Hamiltonian three-parameter spaces of the q-state Potts model with three competing interactions on a Cayley tree** Times Cited: 1
By: Uguz, Selman; Ganikhodjaev, Nasir; Dogan, Hasan
JOURNAL OF THE KOREAN PHYSICAL SOCIETY Volume: 66 Issue: 10 Pages: 1467-1474 Published: MAY 2015
14. **MODULATED PHASE OF AN ISING SYSTEM WITH COMPETING INTERACTIONS ON A CAYLEY TREE** Times Cited: 101
By: VANNIMENUS, J
ZEITSCHRIFT FUR PHYSIK B-CONDENSED MATTER Volume: 43 Issue: 2 Pages: 141-148 Published: 1981

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