9.7 cm

MONTE CARLO ANALYSIS OF THE ASHKIN-TELLER MODELS

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Monte Carlo simulations are used to analyse the critical behaviour of the Ashkin-Teller model [1] in two and three dimensions from the ratio of the square of the second moment of the order parameter to its fourth moment [2]. Phase diagram is calculated in regions of the Ising transitions. The continuity of the order parameter at the critical surface is verified by a finite size scaling analysis for both ferromagnetic and antiferromagnetic interactions.

[1] R.J. Baxter, Exactly Solvable Models in Statistical Mechanics, Academic Press, London, 1982
[2] P. Pawlicki, G. Kamieniarz and L. Dębski, Physica **A242**, 290 (1997)

13.4 cm

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