

Julia Wesselinowa. CRITICAL BEHAVIOUR OF THE SEMIINFINITE TRANSVERSE ISING MODEL

Using a Green's function technique we have investigated a three-dimensional Ising model with modified surface exchange. The surface layer-susceptibility exponent is obtained as $\gamma_s = 1,81 \pm 0,012$ for a cubic lattice and $\gamma_s = 2,10 \pm 0,012$ for a square lattice (which is different compared with the bulk $\gamma = 1,229 \pm 0,012$ for a cubic lattice) and is in agreement with results using the renorm-group and the Monte Carlo methods.

Keywords: critical exponent, surface layer-susceptibility, semiinfinite transverse Ising model, Green's function technique

PACS numbers: 64.60, 77.80

Julia Wesselinowa
St. Kliment Ohridski University of Sofia
Faculty of Physics,
Department of Solid State Physics
5 J. Bouchier Blvd.
1164 Sofia, BULGARIA
E-mail: julia@phys.uni-sofia.bg

Received April 2003