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Subject

Task

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February 6, 2014

Chapter 1

Ising Model

1.1

The probability of states is given by;

$$P(S_i) = e^{[-E(S_i)/k_bT)]} \tag{1.1}$$

$$E(S_i) = -J \sum_{<ij>} S_i S_j \tag{1.2}$$

So the probability depends on the dimensionless quantity;

$$\frac{J}{k_bT} = C \tag{1.3}$$

Each of the variables act only as a scaling constant and can be represented by a the ratio of the other two.

$$\hat{T} = \hat{C} = \frac{k_bC}{J} = 1/T$$