

# Assignment 3

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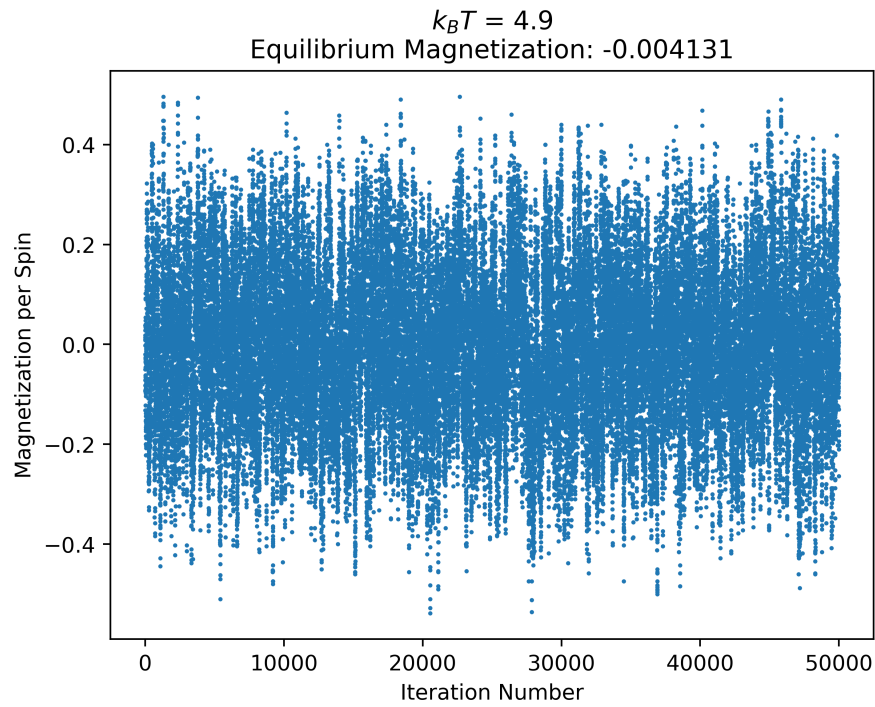
**1**

The total magnetic moment will be  $-L^3$  or  $-8000$ .

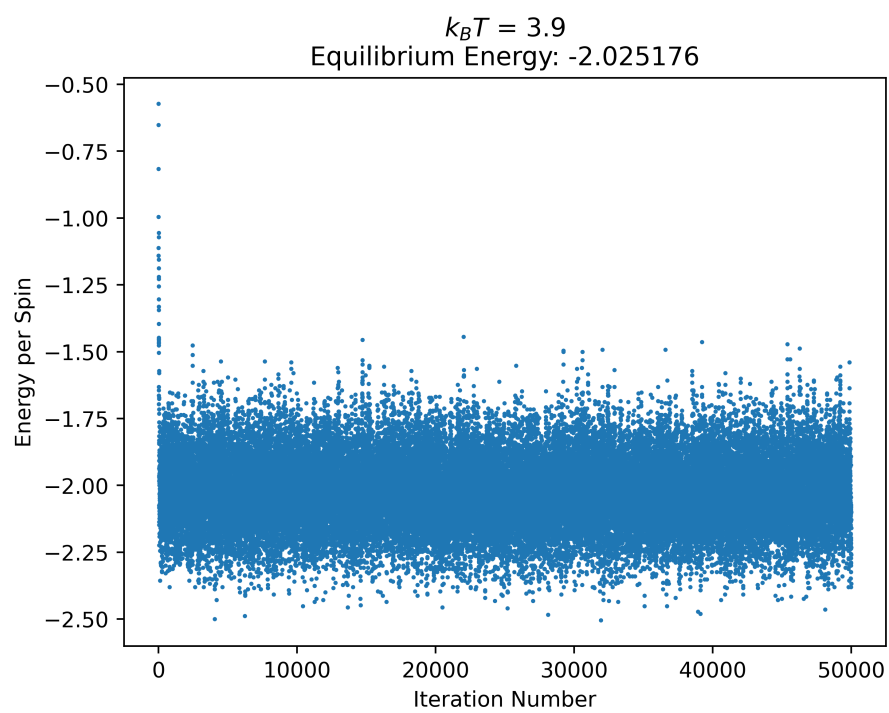
**2**

The number of interactions is 4 per spin and thus  $4L^3/2 = 2L^3$ . Since all interactions will contribute to  $-J$  interaction energy, the total energy will be  $-2JL^3 = -2000$ .

**3**



4



5

