Selected Topics of LGT

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Assignment # 7

The code for all the sections can be found in main.py and simulation.py. What's displayed in the terminal will look like the content of output.txt. Images have been produced to illustrate the different situations requested in the description of the exercise.

Of particular importance are the following comparisons:

- Q_histogram_12_12.png vs Q_histogram_32_32.png:

  for a larger lattice, we see how the topological charge gets restricted more and more to a single value of it. This is due to the barriers between different values of Q increasing more and more when we approach towards the continuum limit; the increasement of these barriers is due to different topological sectors being associated to different local minima, from which is harder and harder to leave as we approach the continuum limit.

- Q_vs_MCsteps_12_12.png vs Q_vs_MCsteps_32_32.png:

  we see how, in accordance to the point above, the values of Q are stuck more rapidly within a single topological sector for a simulation that lives closer to the continuum limit.