

CHAPTER OVERVIEW

4: Phase Transitions

This chapter gives a rather brief discussion of coexistence between different states (“phases”) of collections of many similar particles, and transitions between these phases. Due to the complexity of these phenomena, which involve particle interactions, quantitative analytical results in this field have been obtained only for a few very simple models, typically giving only a very approximate description of real systems.

[4.1: First order phase transitions](#)

[4.2: Continuous phase transitions](#)

[4.3: Landau’s mean-field theory](#)

[4.4: Ising model - Weiss molecular-field theory](#)

[4.5: Ising model - Exact and numerical results](#)

[4.6: Exercise problems](#)

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