Ninnat Dangniam

PHYS 353

Final Project

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Abstract

Investigating critical phenomena, we introduce the renormalization group (RG) method, a powerful mathematical method not being limited only within the field of statistical physics. We begin with the observed natures of critical phenomena, namely classification of phase transitions, order parameters, critical exponents, scaling laws, and universality classes. We introduce the concept of self-similarity by the calculation of block-spin RG method applied to Ising model. By contrast to mean field theory, this theory can explain universality classes and give us the correct critical exponents. Finally, we present some historical aspect of RG theory.
References


References


