

Igor Herbut: A Modern Approach to Critical Phenomena **Cambridge, 2007**

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The phenomenon of phase transitions is a very exciting subject whose theoretical development can be regarded as one of the major achievements in physics during the 1960's and 1970's. We have witnessed the great success manifested by the spectacular agreement between theory and experiment. It was indeed a triumph of modern science! All these achievements are described in the book under review in a clear and simple form. All the commonly encountered problems in other phase transition books (Ginzburg–Landau theory, Wilson renormalization group, Kosterlitz–Thouless transition, the effect of dimensions, quantum phase transitions) are the subject matter of this book. The most valuable feature of the book the numerous problems together with their solutions.

However, it is hard to agree with the word “Modern” in the title. From many references in the book only five date to the twenty-first century in spite of the fact that critical phenomena is not a closed subject, but remains a developing theory with many new applications. One can mention, among others, critical phenomena in electrolytes (M.E. Fisher and colleagues), cosmology as a problem in critical phenomena (E. Smolin in *Lecture Notes in Physics*, vol. 46), critical phenomena in strings (arXiv: hep-th/980206), critical phenomena in complex networks with 508 references (arXiv: cond-mat/0705.0010v6).

My impression is that, by supplemented these and other references, both teachers and students will find this book very useful.

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