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The Equilibrium Thermodynamics and Statistical Mechanics of Interacting Systems

A Prospectus for Equilibrium Theory,
Volume 3 of The Theory of Interacting Systems

by
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"Reason has moons . . ."

Equilibrium thermodynamics, with its two towering laws, was once the queen of the sciences. But as physics moved on, thermodynamics remained rooted in its past—saddled with an often ugly and inconsistent notation and unresolved paradoxes. As a time-independent theory, it is out of touch with its basis in the underlying particle dynamics and even the concept of equilibrium itself has eluded adequate definition.

The equilibrium formalism has obscured the deeper structure of thermodynamics. In a dynamic world constructed out of microscopic particles, equilibrium thermodynamics is properly viewed as a special asymptotic case of a time-dependent macroscopic theory. Its unique features can be used to construct a quantitative explanation of how the microscopic parameters that determine the particle interactions give rise to macroscopic behavior. The result is a computable equilibrium thermodynamics which connects thermodynamic equations of state, surfaces, and phases, to the underlying particle dynamics.

Portions of the text of this Prospectus are excerpted from the Preface, Table of Contents, Chapter 1, and the Back Cover of *The Theory of Interacting Systems, Volume 3, Equilibrium Theory* published by MicroAnalytix. It is referred to as EIS in this document. Similarly, The Theory of Interacting Systems is referred to as TIS.

Additional information on this book will be provided in this document when the book is published.

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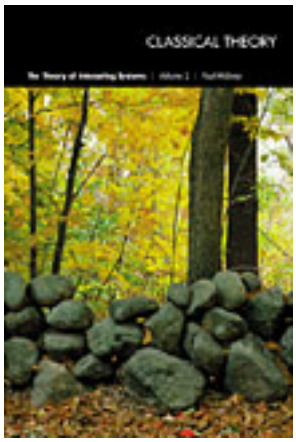

The Theory of Interacting Systems

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