About || Browse || Search || Register || Registered Users Area || Help

Implications of quantum theory in the foundations of statistical mechanics

Wallace, David (2001) Implications of quantum theory in the foundations of statistical mechanics.

Full text available as:
PDF - Requires a viewer, such as Adobe Acrobat Reader or other PDF viewer.
Postscript - Requires a viewer, such as GhostView - GSView
Tex/LaTeX - Requires a viewer, such as Tex Live - Windvi on the TeX Live CD-ROM.

Abstract

An investigation is made into how the foundations of
statistical mechanics are affected once we treat classical mechanics as an approximation to quantum mechanics in certain domains rather than as a theory in its own right; this is necessary if we are to understand statistical-mechanical systems in our own world. Relevant structural and dynamical differences are identified between classical and quantum mechanics (partly through analysis of technical work on quantum chaos by other authors). These imply that quantum mechanics significantly affects a number of foundational questions, including the nature of statistical probability and the direction of time.

Keywords:	Statistical mechanics Quantum chaos
Subjects:	Specific Sciences: Physics: Quantum Mechanics Specific Sciences: Physics: Statistical Mechanics/Thermodynamics
ID Code:	410
Deposited By:	Wallace, David
Deposited On:	28 September 2001

Send feedback to: philsci-archive@library.pitt.edu