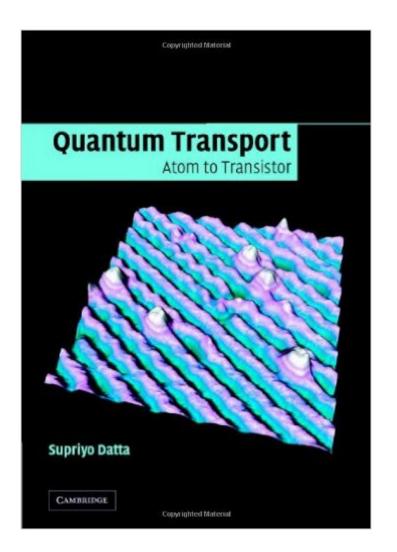
The book was found

# Quantum Transport: Atom To Transistor





# Synopsis

Including some of the most advanced concepts of non-equilibrium quantum statistical mechanics, this book presents the conceptual framework underlying the atomistic theory of matter. No prior acquaintance with quantum mechanics is assumed. Many numerical examples provide concrete illustrations, and the corresponding MATLAB codes can be downloaded from the web. Videostreamed lectures linked to specific sections of the book are also available through web access.

## **Book Information**

Hardcover: 420 pages Publisher: Cambridge University Press; 2nd edition (July 11, 2005) Language: English ISBN-10: 0521631459 ISBN-13: 978-0521631457 Product Dimensions: 6.8 x 0.9 x 9.7 inches Shipping Weight: 2 pounds (View shipping rates and policies) Average Customer Review: 4.5 out of 5 stars Â See all reviews (6 customer reviews) Best Sellers Rank: #821,797 in Books (See Top 100 in Books) #52 in Books > Engineering & Transportation > Engineering > Electrical & Electronics > Electronics > Optoelectronics #775 in Books > Science & Math > Physics > Quantum Theory #23193 in Books > Textbooks > Science & Mathematics

## **Customer Reviews**

The author (SD) claims that this is a physics book written for engineers. Maybe that explains why, unlike the authors of most physics books written for physicists, he doesn't seem particularly concerned with elegance, concision, abstract generality or showing how clever he is in this book. Apparently, his main concern is to help you understand stuff. Not only that, but he's chosen some very interesting stuff to tell you about. The narrative arc of the book is to show you how to get from a particle in a box to Ohm's Law, as instantiated in nanoscale transistors. The path to doing this is already laid out in the first chapter, using a "toy" level of analysis. The next nine chapters lay out building blocks for attacking the problem using Green's function (GF) techniques, which are a bit more modern and versatile than the transmission formalism favored in the past (including by SD in a previous book). The whole picture is put together in Chapters 11 and 12, followed by an appendix that shows (albeit quite tersely in comparison to the rest of the book) how the same problem is dealt

with using a second-quantization (2Q) GF formalism. The fact many pieces of this arc are repeated at successively deeper levels of analysis is very helpful. So too are SD's "big picture" introductions at the beginning of each chapter, and at the beginnings of the longer subchapters. Throughout, SD pauses to describe in words and pictures the physics behind pretty much each term of each equation -- a de-mystification that most authors of physics texts seem to avoid as if it were blasphemy. I was especially impressed when SD used these opportunities to allude to some deeper and more general issues, such as how you get from time-reversible equations to irreversible physics.

#### Download to continue reading...

Quantum Transport: Atom to Transistor Modeling Groundwater Flow and Contaminant Transport (Theory and Applications of Transport in Porous Media) Freight Forwarding and Multi Modal Transport Contracts (Maritime and Transport Law Library) ASTNA Patient Transport: Principles and Practice (Air & Surface Patient Transport: Principles and Practice) Transport Nursing (CTRN) Review (Certification in Transport Nursing Book 1) Quantum Transport in Mesoscopic Systems: Complexity and Statistical Fluctuations (Mesoscopic Physics and Nanotechnology) Quantum Transport in Mesoscopic Systems: Complexity and Statistical Fluctuations. A Maximum Entropy Viewpoint (Mesoscopic Physics and Nanotechnology) Quantum Transport Calculations for Nanosystems Towards Solid-State Quantum Repeaters: Ultrafast, Coherent Optical Control and Spin-Photon Entanglement in Charged InAs Quantum Dots (Springer Theses) Quantum Nanoelectronics: An introduction to electronic nanotechnology and guantum computing QUANTUM SELF HYPNOSIS STOP SMOKING NOW: Hypnosis Script & Inductions Included! (Quantum Self Hypnosis Singles Book 2) Quantum Runes: How to Create Your Perfect Reality Using Quantum Physics and Teutonic Rune Magic (Creating Magick with The Universal Laws of Attraction Book 1) Quantum Thermodynamics: Emergence of Thermodynamic Behavior Within Composite Quantum Systems (Lecture Notes in Physics) Quantum Mechanics and Quantum Field Theory: A Mathematical Primer Quantum Computation and Quantum Information: 10th Anniversary Edition Getting Started with Intel Edison: Sensors, Actuators, Bluetooth, and Wi-Fi on the Tiny Atom-Powered Linux Module (Make : Technology on Your Time) Skis Against the Atom: The Exciting, First Hand Account of Heroism and Daring Sabotage During the Nazi Occupation of Norway The Consciousness of the Atom Comprehensive Heterocyclic Chemistry : Comprehensive Heterocyclic Chemistry, Six-Membered Rings With One Nitrogen Atom The Atom in the History of Human Thought

### <u>Dmca</u>