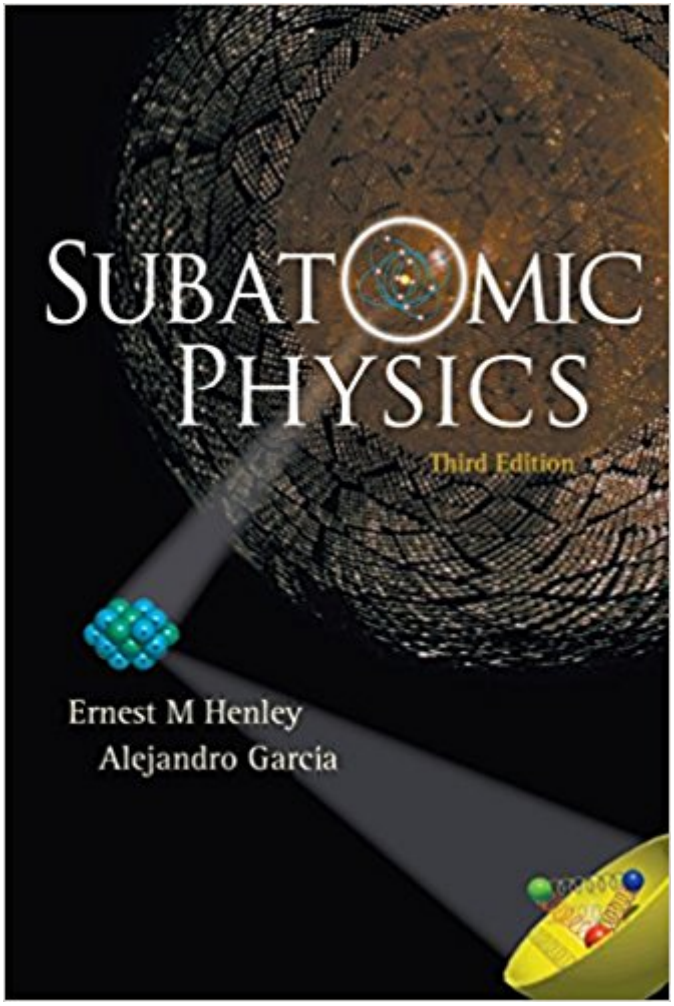
Ebook Directory
the best source of ebook

The book was found

Subatomic Physics



PDF
Adobe
DOWNLOAD EBOOK

Synopsis

This is the third and fully updated edition of the classic textbook on physics at the subatomic level. An up-to-date and lucid introduction to both particle and nuclear physics, the book is suitable for both experimental and theoretical physics students at the senior undergraduate and beginning graduate levels. Topics are introduced with key experiments and their background, encouraging students to think and empowering them with the capability of doing back-of-the-envelope calculations in a diversity of situations. Earlier important experiments and concepts as well as topics of current interest are covered, with extensive use of photographs and figures to convey principal concepts and show experimental data. The coverage includes new material on: Detectors and accelerators Nucleon elastic form factor data Neutrinos, their masses and oscillations Chiral theories and effective field theories, and lattice QCD Relativistic heavy ions (RHIC) Nuclear structure far from the region of stability Particle astrophysics and cosmology

Book Information

Paperback: 640 pages

Publisher: World Scientific Publishing Company; 3 edition (July 13, 2007)

Language: English

ISBN-10: 9812700579

ISBN-13: 978-9812700575

Product Dimensions: 6 x 1.3 x 9 inches

Shipping Weight: 2.6 pounds (View shipping rates and policies)

Average Customer Review: 3.5 out of 5 stars 8 customer reviews

Best Sellers Rank: #526,149 in Books (See Top 100 in Books) #55 inÃ Â Books > Science & Math > Physics > Nuclear Physics > Atomic & Nuclear Physics #78 inÃ Â Books > Science & Math > Physics > Nuclear Physics > Particle Physics #1664 inÃ Â Books > Textbooks > Science & Mathematics > Physics

Customer Reviews

Henley and GarcÃƒÂ- a's presentation and style hold the reader's attention right from the start. The treatment is at just the right level to whet the reader's appetite, slake their thirst for understanding and assess the current `state of the art' ... this is a highly enlightening and up-to-date text, rather ambitious in its scope but successful in its aim to provide a comprehensive and comprehensible pedagogic overview of an exciting field of physics. --Contemporary Physics --This text refers to the Hardcover edition.

An explanation of the basic concepts of theoretical and experimental nuclear and particle physics. --This text refers to an out of print or unavailable edition of this title.

In memoriam: Ernest Henley (June 10, 1924 ÃƒÂ¢Ã â ¬Ã â œ March 26, 2017)"...was universally respected throughout the field of physics as a man of creativity,honesty and great common sense,ÃƒÂ¢Ã â ¬Ã Â•Finding, as I did, a less expensive copy of this text, I was compelled to purchase same.This, based on the Reviews I read here. I thought surely something is amiss !After all, here is an excerpt from the review in Contemporary Physics (2009, Volume 50,Number 6):"...concepts and terms are brought in at an elementary level with allusion to their later examinationin greater depth." Perusal of that review shows that this text is considered in very high regard.Thus, I wondered, why the disconnect (between professor and student) and discontent (from students).Amusingly, I rather find this an interesting text. However, I am unable to ascertain exactly who the readershipis intended to be. The entire panoply of undergraduate physics courses needs to be firmly at hand.And, we read Henley and Garcia's reference to Jackson's Classical Electrodynamics textbook:"...it is beautifully written and provides an exceptionally lucid treatment of classical electrodynamics."Now, if Jackson--as elucidated above---is not to your liking, I rather suspect Henley and Garcia will not be, either.How about the footnote, Page 293: "Many students claim that the best way to solve Physics problems in undergraduatecourses is the following--list the physical quantities that appear in the problem. Find the equation in the text thatcontains the same symbols.Insert.Hand-in." All I can add is, if that is the way any student solves any problem, thenthis book of Henley and Garcia is definitely off your list ! Now, let us look at the contents:(1) The first four chapters assemble the "tools," the detectors and the means by which numbers are gotten from experiment.These four chapters (fifty pages) should be rather easy to assail. Page six, Table 1.11 and Equation 1.12, those are yourguidelines. If you do not know those few things outright, then no need to look further !(2) The next 100-pages,or so, is a rapid-fire summary of the 'particle zoo' and introduction to quantum chromodynamics.Fourier Transformations are assumed known. Dirac's Hole Theory is bypassed for a Stueckelberg-Feynman approach.This approach--Page 110--is to be commended. Mostly the authors follow a qualitative, semi-technical synopsis.(3) Sixth Chapter: Structure of Subatomic Particles. I like this chapter quite a bit.Scattering (Rutherford,Mott) segues to Form Factors. Presented is a very nice discussion of Leptons as point-particles.Also, a nice qualitative elaboration of Integral Equations as applied to scattering is offered (Pages 176-177).(4) Third Part of the text begins with Symmetries and Conservation Laws.Gauge Invariance is here

introduced.Angular Momentum and Isospin arrive on the scene in Chapter Eight (Page 221). This, qualitatively described.Following which, PCT. All accomplished at a fairly mundane level. Kaon System gets nice discussion.And we read: "Kaons are a wonderful source of surprises." (Pages 260-271).(5) Interactions are next. (Part Four): A very nice introduction to Electromagnetic Interaction is first up.We read: "Many of the ideas that are important in quantum electrodynamics will show up in this example--Emission of a Photon by an atomic system in transition from one state to another." (see Page 293).Another useful section elaborates upon the question "What experiments will give information about theinteractions of Photons with Hadrons,"the following fifteen pages will then fill you with much useful insight.(6) Weak Interactions, next: Beta Decay,Weak Currents,Neutrino Masses,a brief review of chirality versushelicity, all serve to round out a fascinating tour.(7) Earlier in the text was introduced Gauge Invariance. Chapter Twelve will elaborate on the theme.And, I like the fact that "...the proof of Equation 12.27 is straightforward, if tedious. We shall show it forthe Electric Field and leave it as an exercise for the reader to prove it for the Magnetic Field." (Page 393).(I do believe there is a typo in the Equation 12.37, Page 395--the "i" should multiply both factors,px and Et).(8) Electroweak Theory of Standard Model. Here, an instance where the authors state "...the subject iscomplex,for details we refer the reader to texts and reviews..." So, this chapter--thirteen--is merely qualitative.(9) Strong Interactions, next elaboration. We were introduced earlier in the book, now we get it again.Let us read a few problems from this chapter:" Do conservation laws permit terms in the pion-nucleon interaction that are quadratic in the pion wave function? ""What are the spins and parities of the four lowest energy states of glueballs?"Show that the Coulomb potential solves Poisson’s Equation,""What is the range of the one-gluon exchange force,?One quickly perceives that there is a wide range of problems offered for student involvement.(10) Finally, Part Five concentrates on Models: Quark Models (nicely done),Liquid Drop and Fermi Gas Models,the Shell Model and the Collective Model. Each of these Models is approached from a largely qualitative angle.The final, twenty-five page,chapter is a very elementary look into Astrophysics Applications. The problemsat the end of this chapter are quite elementary. There you have a summary of the book’s contents.And, also, a reason for the disparity among the reviews. Too much to grab hold of at one sitting !The book, as do a few others of this ilk, attempts to cover far too many topics.It is at once advanced and elementary. Some of the problems for students are rather advanced, and, yet,some of the problems are very elementary. The qualitative discussions, throughout, are very well done.The references and bibliography span the gamut of research papers,advanced texts, and elementary expositions.Happily, there is something for everybody. Unhappily, there is too much for any one student !However, this is an interesting

book to dip into !Thus, I can recommend same if only for collateral study.

This is a strange book in many ways, and has gotten steadily stranger since its first edition many years ago. It was originally intended for a course for undergraduate physics majors, and the first edition, in the 1970s, was indeed at that level. The present edition is all over the place as regards level. I would hesitate to use it as a text, since it is really more like an encyclopedia. Being printed on slick paper, the paperback edition is amazingly massive, you almost strain yourself picking it up. In terms of content, a good deal of the presentation is clear and to the point, but the book very frequently veers off into nearly incomprehensible, long and sort of anal-retentive derivations of "toy-model" results no one would have much if any interest in, an example being section 12.3.The great strength of the book is that it IS an encyclopedia. While giving a final exam over a long 3-hour interval, I thought of a large number of topics of contemporary interest in particle (and nuclear) physics, and used the index to turn to the book’s coverage of the topic. In each case the coverage was up-to-date, informed, level-headed and clear. So I think the book makes a great reference, but I have serious reservations about its suitability as a textbook. On the other hand, I can’t think of another book at this level which would make a better text... so there you are.

Plenty of content, but considering the price of the text it would pain me not to mention the sloppiness in execution. Steps in derivations are missed, in such a way that only leads to wasted time I understand that in some cases space can be saved by omitting elementary steps, but there’s no excuse for doing so on tougher point. The writing style lacks, uneconomical and not especially clear. In fact the prose content does little to develop physical concepts in the readers mind, instead serving merely as a convenient boundary between derivations. If you wish to obtain an interesting perspective on subatomic physics, while developing a deep understanding of the topic, look elsewhere.

I just got my hands on the first edition of this book, came to to see if anything newer was available and got disappointed in the low rating of the book. My only goal in writing this brief review is to say that there are people out there who just like myself might like this book.The book nicely blends particle and nuclear physics stressing phenomena rather than pure mathematics. Just as the editorial review states, the book gives many examples of "back of the envelope" calculations again stressing the idea and simplifying the details. The bibliography is truly impressive. The footnotes on every page contain references to the original papers and/or reviews where the idea being discussed

was either presented for the first time or where one can find a rather clear exposition of it. As for the reason for such a book I think it would be nice to meet all the players of the subatomic world before "skipping straight to QFT" as another reviewer put it.So why do I give this book only 4 stars? The main reason is that I have only seen the first edition and feel it would be misleading to rate the third edition so highly.

Download to continue reading...

The Standard Model of Particle Physics: "The Subatomic Realm" Subatomic Physics Subatomic Physics Solutions Manual A Tour of the Subatomic Zoo: A Guide to Particle Physics Atom: Journey Across the Subatomic Cosmos Understanding Quarks (Exploring the Subatomic World) The Solid State: An Introduction to the Physics of Crystals for Students of Physics, Materials Science, and Engineering (Oxford Physics Series) Head First Physics: A learner's companion to mechanics and practical physics (AP Physics B - Advanced Placement) Physics for Scientists and Engineers with Modern Physics: Volume II (3rd Edition) (Physics for Scientists & Engineers) Physics for Kids : Electricity and Magnetism - Physics 7th Grade | Children's Physics Books Six Ideas that Shaped Physics: Unit N - Laws of Physics are Universal (WCB Physics) Quantum Electrodynamics: Gribov Lectures on Theoretical Physics (Cambridge Monographs on Particle Physics, Nuclear Physics and Cosmology) Six Ideas That Shaped Physics: Unit R - Laws of Physics are Frame-Independent (WCB Physics) Problem-Solving Exercises in Physics: The High School Physics Program (Prentice Hall Conceptual Physics Workbook) For the Love of Physics: From the End of the Rainbow to the Edge of Time - A Journey Through the Wonders of Physics Quantum Physics: Beginner's Guide to the Most Amazing Physics Theories 5 Steps to a 5 AP Physics 1: Algebra-Based 2018 edition (5 Steps to a 5 Ap Physics 1 & 2) Barron's AP Physics 1 and 2 (Barron's Ap Physics B) Sterling Test Prep GRE Physics Practice Questions: High Yield GRE Physics Questions with Detailed Explanations Thermodynamics and the Kinetic Theory of Gases: Volume 3 of Pauli Lectures on Physics (Dover Books on Physics)

Contact Us

DMCA

Privacy

FAQ & Help