



Particles and Fundamental Interactions: An Introduction to Particle Physics (Undergraduate Lecture Notes in Physics)

By Sylvie Braibant, Giorgio Giacomelli, Maurizio Spurio



Download



Read Online



Get Print Book

Particles and Fundamental Interactions: An Introduction to Particle Physics (Undergraduate Lecture Notes in Physics) By Sylvie Braibant, Giorgio Giacomelli, Maurizio Spurio

The book provides theoretical and phenomenological insights on the structure of matter, presenting concepts and features of elementary particle physics and fundamental aspects of nuclear physics.

Starting with the basics (nomenclature, classification, acceleration techniques, detection of elementary particles), the properties of fundamental interactions (electromagnetic, weak and strong) are introduced with a mathematical formalism suited to undergraduate students. Some experimental results (the discovery of neutral currents and of the W^\pm and Z^0 bosons; the quark structure observed using deep inelastic scattering experiments) show the necessity of an evolution of the formalism. This motivates a more detailed description of the weak and strong interactions, of the Standard Model of the microcosm with its experimental tests, and of the Higgs mechanism. The open problems in the Standard Model of the microcosm and macrocosm are presented at the end of the book.



[Download Particles and Fundamental Interactions: An Intro ...pdf](#)



[Read Online Particles and Fundamental Interactions: An Intro ...pdf](#)

Particles and Fundamental Interactions: An Introduction to Particle Physics (Undergraduate Lecture Notes in Physics)

By Sylvie Braibant, Giorgio Giacomelli, Maurizio Spurio

Particles and Fundamental Interactions: An Introduction to Particle Physics (Undergraduate Lecture Notes in Physics) By Sylvie Braibant, Giorgio Giacomelli, Maurizio Spurio

The book provides theoretical and phenomenological insights on the structure of matter, presenting concepts and features of elementary particle physics and fundamental aspects of nuclear physics.

Starting with the basics (nomenclature, classification, acceleration techniques, detection of elementary particles), the properties of fundamental interactions (electromagnetic, weak and strong) are introduced with a mathematical formalism suited to undergraduate students. Some experimental results (the discovery of neutral currents and of the W_{\pm} and Z^0 bosons; the quark structure observed using deep inelastic scattering experiments) show the necessity of an evolution of the formalism. This motivates a more detailed description of the weak and strong interactions, of the Standard Model of the microcosm with its experimental tests, and of the Higgs mechanism. The open problems in the Standard Model of the microcosm and macrocosm are presented at the end of the book.

Particles and Fundamental Interactions: An Introduction to Particle Physics (Undergraduate Lecture Notes in Physics) By Sylvie Braibant, Giorgio Giacomelli, Maurizio Spurio **Bibliography**

- Sales Rank: #3129132 in Books
- Brand: Brand: Springer
- Published on: 2011-11-15
- Original language: Italian
- Number of items: 1
- Dimensions: 9.30" h x 1.00" w x 6.10" l, 1.55 pounds
- Binding: Paperback
- 498 pages

 [Download Particles and Fundamental Interactions: An Introductory ...pdf](#)

 [Read Online Particles and Fundamental Interactions: An Introductory ...pdf](#)

Download and Read Free Online Particles and Fundamental Interactions: An Introduction to Particle Physics (Undergraduate Lecture Notes in Physics) By Sylvie Braibant, Giorgio Giacomelli, Maurizio Spurio

Editorial Review

From the Back Cover

This book aims to provide the basis of theoretical foundation and phenomenological knowledge of the structure of matter at the subatomic level. It starts by presenting the general concepts at the simplest level and does not require previous knowledge of the field, except for the basic quantum mechanics. The readers are gradually introduced to the increasingly more advanced topics, so that this text can accompany students all the way to their graduate and doctoral studies in experimental high-energy physics.

Special emphasis is placed on experimental and phenomenological aspects of the field and how measurements and theory interplay in the development of particle physics. The book is based on the authors' undergraduate and graduate lecture courses at the University of Bologna, Italy.

About the Author

^ 650 publications in scientific journals and over 350 reports and conference proceedings. He supervised 115 Laurea Theses, 30 PhD Theses. He received prizes from the Italian Physical Society, the University of Bologna and from the A. Della Riccia Foundation. He is "Marchigiano of the year 2006". In 1981 the Institute for Scientific Information (ISI) listed him in the "1000 Contemporary Scientists Most-Cited in 1969-78". He is presently in the Highly Cited list of ISI.

He was Director of the Institute of Physics, of the Department of Physics (1975-88) and President of the Laurea in Physics Committee of the University of Bologna. He was a member of many national and international scientific committees (SPSC, LEPC and ECFA at CERN, HEP at Fermilab, of INFN, of the ENI foundation, of CTS of ENEA, bioethics of CNR, of the Galvani Committee). Presently he is Emeritus Professor at the University of Bologna, collaborator of INFN and CERN, Fellow of the American Physical Society, Socio Benemerito of the Italian Physical Society, member of the European Physical Society, of the Accademia delle Scienze di Bologna, of the New York Academy of Sciences, and the Accademia Teatina. He is one of the Editors of the Journal "Astroparticle Physics".

Users Review

From reader reviews:

Frances Feist:

In this 21st centuries, people become competitive in every single way. By being competitive now, people have do something to make all of them survives, being in the middle of the crowded place and notice by simply surrounding. One thing that occasionally many people have underestimated this for a while is reading. Yes, by reading a guide your ability to survive improve then having chance to endure than other is high. For you who want to start reading a new book, we give you this particular Particles and Fundamental Interactions: An Introduction to Particle Physics (Undergraduate Lecture Notes in Physics) book as beginning and daily reading book. Why, because this book is greater than just a book.

Heidi Fritz:

This book entitled *Particles and Fundamental Interactions: An Introduction to Particle Physics* (Undergraduate Lecture Notes in Physics) to be one of several books this best seller in this year, this is because when you read this guide you can get a lot of benefit in it. You will easily to buy this specific book in the book shop or you can order it by using online. The publisher of the book sells the e-book too. It makes you quicker to read this book, since you can read this book in your Cell phone. So there is no reason to you to past this book from your list.

Chester Grantham:

The particular book *Particles and Fundamental Interactions: An Introduction to Particle Physics* (Undergraduate Lecture Notes in Physics) will bring you to the new experience of reading any book. The author style to describe the idea is very unique. When you try to find new book you just read, this book very suitable to you. The book *Particles and Fundamental Interactions: An Introduction to Particle Physics* (Undergraduate Lecture Notes in Physics) is much recommended to you to read. You can also get the e-book from official web site, so you can more readily to read the book.

Alex Tipton:

Reading a book make you to get more knowledge from this. You can take knowledge and information from a book. Book is written or printed or descriptive from each source that will filled update of news. On this modern era like right now, many ways to get information are available for a person. From media social similar to newspaper, magazines, science book, encyclopedia, reference book, fresh and comic. You can add your knowledge by that book. Ready to spend your spare time to open your book? Or just looking for the *Particles and Fundamental Interactions: An Introduction to Particle Physics* (Undergraduate Lecture Notes in Physics) when you required it?

Download and Read Online *Particles and Fundamental Interactions: An Introduction to Particle Physics* (Undergraduate Lecture Notes in Physics) By Sylvie Braibant, Giorgio Giacomelli, Maurizio Spurio #J2N5CZUYHSB

Read Particles and Fundamental Interactions: An Introduction to Particle Physics (Undergraduate Lecture Notes in Physics) By Sylvie Braibant, Giorgio Giacomelli, Maurizio Spurio for online ebook

Particles and Fundamental Interactions: An Introduction to Particle Physics (Undergraduate Lecture Notes in Physics) By Sylvie Braibant, Giorgio Giacomelli, Maurizio Spurio Free PDF d0wnl0ad, audio books, books to read, good books to read, cheap books, good books, online books, books online, book reviews epub, read books online, books to read online, online library, greatbooks to read, PDF best books to read, top books to read Particles and Fundamental Interactions: An Introduction to Particle Physics (Undergraduate Lecture Notes in Physics) By Sylvie Braibant, Giorgio Giacomelli, Maurizio Spurio books to read online.

Online Particles and Fundamental Interactions: An Introduction to Particle Physics (Undergraduate Lecture Notes in Physics) By Sylvie Braibant, Giorgio Giacomelli, Maurizio Spurio ebook PDF download

Particles and Fundamental Interactions: An Introduction to Particle Physics (Undergraduate Lecture Notes in Physics) By Sylvie Braibant, Giorgio Giacomelli, Maurizio Spurio Doc

Particles and Fundamental Interactions: An Introduction to Particle Physics (Undergraduate Lecture Notes in Physics) By Sylvie Braibant, Giorgio Giacomelli, Maurizio Spurio Mobipocket

Particles and Fundamental Interactions: An Introduction to Particle Physics (Undergraduate Lecture Notes in Physics) By Sylvie Braibant, Giorgio Giacomelli, Maurizio Spurio EPub