

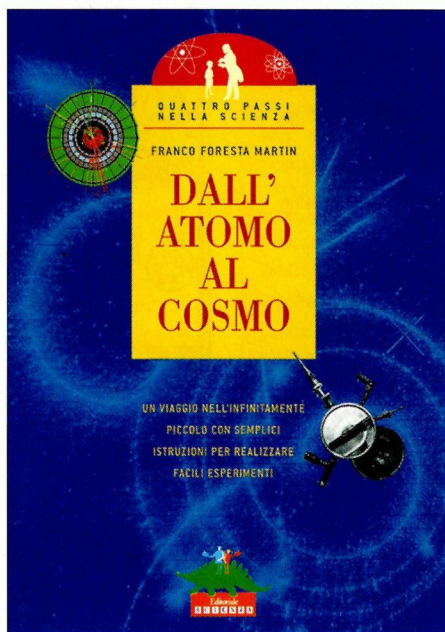
BOOKSHELF

Dall'Atomo al Cosmo (From Atoms to the Cosmos) by Franco Foresta Martin, Editoriale Scienza. ISBN 8873072305, €12.90.

From the title it might seem that this book is a scientific voyage from the infinitely small to the infinitely large, but in fact it's more like a historic trip from the origin of science to today's research in particle physics. From the Greek philosophers to the Standard Model, it introduces the reader to the most important contributors to today's physical description of the constituents of matter. Although cosmology and astrophysics are not discussed, the book explores the history of particle physics in 12 chapters. It chronologically presents the most important challenges and breakthroughs, and includes some fascinating anecdotes, which make reading the book more pleasant.

The layout of the book looks inviting, especially (in the reviewer's opinion) for a younger audience, and no formulae are used. Simple experiments presented at the end of almost every chapter can be easily performed at home or at school. The book is produced in collaboration with the Italian National Institute for Nuclear Physics (INFN), which is distributing it free to schools in Italy. The final chapter describes the activities of the INFN and thereby shows how Italian researchers contribute to physics. In this way, students are informed about the opportunities they can expect if they study physics at university.

The author, Franco Foresta Martin, is a well known science journalist and popularizer. His personal experience as a writer, as well as good scientific accuracy, come out throughout the book. However, it is not clear whether the historic approach and the (often too?) simple experiments can be really effective with today's young people, in the era of the Internet and high technology. Sometimes the difficulty in finding the right level of explanation is particularly apparent, as the reader can easily get lost between the history and life of the scientists and some of the deep notions of the physics they performed. The chapter on radioactivity shows



this very well: Rutherford's theory about atoms is introduced at the same time as ions and natural radioactivity. On the other hand, the experiment proposed at the end of the same chapter – radioactivity seen on a TV screen – seems potentially more tailored to today's young generation, and therefore more appropriate.

The "Quarkoscopio", or quarkoscope, is the activity proposed at the end of the last chapter, which is about the Standard Model and the use of fundamental particles in medicine. With this simple instrument, which can be built using cardboard, one can easily find out the quark constituents of the most common particles. The quarkoscope is quite an original idea and could turn out to be useful even to more experienced physicists!

Antonella del Rosso Vite, CERN.

Books received

Cohesion: A Scientific History of Intermolecular Forces by J S Rowlinson, Cambridge University Press. Hardback ISBN 0521810085, £65.

A detailed historical account of how leading scientists of the past 300 years have tried to

understand why matter sticks together, this book will interest physicists and physical chemists, as well as historians of science.

Theory of Optical Processes in Semiconductors by P K Basu, Oxford University Press. Paperback ISBN 0198526292, £39.95.

Now out in paperback this book, aimed at graduate students in physics and engineering, and other beginners in the field, provides a simple quantum mechanical theory of important optical processes in semiconductors.

Plasma Waves: Second Edition by D G Swanson, Institute of Physics Publishing. Hardback ISBN 075030927X, £48 (\$75).

This extended and revised edition encompasses waves in cold, warm and hot plasmas and relativistic plasmas. Written as a textbook for students, it also provides essential reference material for researchers.

Online publications

A Brazilian feast of cosmology and gravitation. www.cosmologia.cbpf.br.

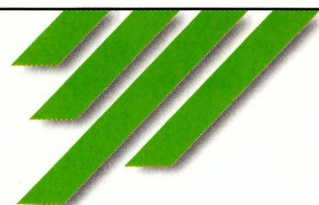
The Brazilian School of Cosmology and Gravitation celebrated its 25th anniversary in 2002 by launching a website that contains all 93 lectures and seminars of the nine schools that have been organized since the first school in 1977. The site, set up by the Cosmology and Gravitation Group at the Brazilian Center of Scientific Research (CBPF), which organizes the schools, contains an impressive collection of talks by many of the most important scientists in the areas of cosmology, gravitation, astrophysics and field theory. It is an important resource for students and researchers, which also shows the evolution of these areas of physics during the past 25 years. The material, which is in PDF format, can be accessed via the website of the Cosmology and Gravitation Group at the CBPF (www.cosmologia.cbpf.br).

The proceedings of the 10th school, which was held from 29 July – 9 August 2002, will be published this year by AIP.



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