

Bookshelf

Particle Astrophysics by H V Klapdor-Kleingrothaus and K Zuber:
Institute of Physics Publishing ISBN
0 7503 0403 0

This new book is more than just a graduate level textbook, as its title suggests, it is also a sign of the times. Particle astrophysics is a new field emerging as the questions traditionally in the domain of particle physics merge with those of astrophysics. Beginning with a summary of particle physics' Standard Model and Grand Unified Theories, the book moves on to the essentials of cosmology and nucleosynthesis.

Having covered the essential groundwork from both fields, it is the second half of the book in which the overlap between them comes to the fore. Chapters covering subjects from solar neutrinos to axions carefully describe the complementarity of the accelerator approach with observations using passive detectors, both terrestrial and space borne.

The book has been translated into English from the original German (Teilchenphysik ohne Beschleuniger, B G Teubner GmbH, Stuttgart) by S. M. Foster and B. Foster. Publication in the two languages was simultaneous, so the English version is right up to date. In the solar neutrino chapter, for example, preliminary Superkamiokande results from 1997 appear along with descriptions of experiments, such as BOREXINO and SNO, yet to begin.

'Particle Astrophysics' covers a vast range of material and consequently does not delve too deeply into any one subject. Nevertheless, it provides a highly readable account of this new field, and a comprehensive bibliography should satisfy any desire for

further reading. It is a textbook which will be of interest not only to graduate students of the new discipline, but also to established hands in either of its parent fields.

James Gillies

Books received

Confinement, Duality, and Nonperturbative Aspects of QCD, Edited by Pierre van Baal, NATO Advanced Study Institute Series, Plenum Press (New York) \$155 0 306 45826 8

The proceedings (550 pages) of a 1997 NATO Advanced Study Institute school at the Newton Institute for Mathematical Sciences, Cambridge, UK, organized by David Olive, Pierre van Baal, and Peter West, which focused on the ever-topical question of understanding how quarks are confined in subnuclear particles.

Quantum Chance and Non-Locality - Probability and Non-Locality in the Interpretations of Quantum Mechanics, by W. Michael Dickson, Cambridge University Press 0 521 58127 3

Ever since its introduction in the 1920s, the underlying logic of quantum mechanics has been difficult and opaque. This book looks at the description of the various interpretations of quantum mechanics, in particular their implications for probability and non-locality.

Mathematical Topics in Fluid Mechanics, Volume 2 Compressible Models by Pierre-Louis Lions Oxford Science Publications 0 19 8514883 39 £39.50 hbk

In the Oxford Lecture Series in Mathematics and its Applications, this is a companion volume to Volume 1, on Incompressible Models, by the same author.

9.06.98 - 28.06.98

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