THE MANCHESTER PHYSICS SERIES

General Editors: E.K. LOEBINGER; J.R. FORSHAW; H.E. GLEESON School of Physics and Astronomy, The University of Manchester

PROPERTIES OF MATTER STATISTICAL PHYSICS Second Edition ELECTROMAGNETISM Second Edition STATISTICS SOLID STATE PHYSICS Second Edition QUANTUM MECHANICS COMPUTING FOR SCIENTISTS THE PHYSICS OF STARS Second Edition NUCLEAR PHYSICS INTRODUCTION TO QUANTUM MECHANICS PARTICLE PHYSICS Fourth Edition DYNAMICS AND RELATIVITY VIBRATIONS and WAVES MATHEMATICS FOR PHYSICISTS

Particle Physics, Fourth Edition, provides a short introduction to the study of the fundamental constituents of matter and the forces between them. In order to make this stimulating subject readily accessible to undergraduate students, it emphasises the foundations of the so-called standard model in the interpretation of experimental data, with a minimum of mathematical detail, and is suitable for any student who has previously taken introductory courses in nonrelativistic quantum mechanics and special relativity.

The structure of the book is simple. The first three chapters give a brief overview of the subject and introduce some basic ideas that are used extensively throughout the rest of the book. This is followed by an outline of the experimental methods

> used to explore the subject and a series of chapters that discuss the most important components of the standard model in more detail. Finally, there is a brief account of some of the significant open questions 'beyond the standard

> > model' that are currently being investigated in laboratories around the world.

> > > 5

B.H. FLOWERS and E. MENDOZA F. MANDL I,S. GRANT and W.R.PHILIPS R. J. BARLOW J. R. HOOK and H. E. HALL F. MANDL R.J. BARLOW and A. R. BARNETT A.C. PHILLIPS J.S. LILLEY A.C. PHILLIPS B.R.MARTIN and G. SHAW J.R. FORSHAW G.C.KING B.R. MARTIN and G.SHAW

Particle Physics, Fourth Edition features include:

• A revised discussion of the Higgs boson and its properties in the light of recent experimental results.

4

- An account of the discovery of exotic hadrons, beyond the simple quark model.
- Expanded treatments of neutrino physics and *CP* violation in *B* decays.
- An updated account of 'physics beyond the standard model', including the interaction of particle physics with cosmology.
- Additional problems in all chapters, with solutions to selected problems available on the book's website.







