

Springer

1st  
edition1st ed. 2018, IX, 277 p. 157  
illus., 117 illus. in color.**Printed book**

Softcover

**Printed book**

Softcover

ISBN 978-3-319-98526-8

\$ 89,99

Available

**Discount group**

Professional Books (2)

**Product category**

Monograph

**Series**

Lecture Notes in Physics

**Other renditions**

Softcover

ISBN 978-3-319-98528-2

Physics : Elementary Particles, Quantum Field Theory

Amsler, Claude

# The Quark Structure of Hadrons

An Introduction to the Phenomenology and Spectroscopy

- Modern primer on the subject matter for a new generation of experiments and high-energy physicists
- Offers course-tested material
- Includes problems and solutions

Novel forms of matter, such as states made of gluons (glueballs), multiquark mesons or baryons and hybrid mesons are predicted by low energy QCD, for which several candidates have recently been identified. Searching for such exotic states of matter and studying their production and decay properties in detail has become a flourishing field at the experimental facilities now available or being built - e.g. BESIII in Beijing, BELLE II at SuperKEKB, GlueX at Jefferson Lab, PANDA at FAIR, J-PARC and in the upgraded LHC experiments, in particular LHCb. A modern primer in the field is required so as to both revive and update the teaching of a new generation of researchers in the field of QCD. These lectures on hadron spectroscopy are intended for Master and PhD students and have been originally developed for a course delivered at the Stefan Meyer Institute of the Austrian Academy of Sciences. They are phenomenologically oriented and intended as complementary material for basic courses in particle and nuclear physics. The book describes the spectra of light and heavy mesons and baryons, and introduces the fundamental properties based on symmetries. Further, it derives multiplet structures, mixing angle, decay coupling constants, magnetic moments of baryons, and predictions for multiquark states and compares these with suitable experimental data. Basic methods of calculating decay angular distributions and determining masses and widths of resonances are also presented. The appendices provide students and newcomers to the field with the necessary background information, and include a set of problems and solutions.

**Order online at [springer.com/booksellers](https://www.springer.com/booksellers)****Springer Nature Customer Service Center LLC**

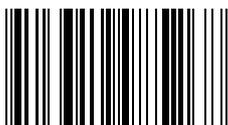
233 Spring Street

New York, NY 10013

USA

T: +1-800-SPRINGER NATURE

(777-4643) or 212-460-1500

[customerservice@springernature.com](mailto:customerservice@springernature.com)

ISBN 978-3-319-98526-8 / BIC: PHQ / SPRINGER NATURE: SCP23029

Prices and other details are subject to change without notice. All errors and omissions excepted. Americas: Tax will be added where applicable. Canadian residents please add PST, QST or GST. Please add \$5.00 for shipping one book and \$ 1.00 for each additional book. Outside the US and Canada add \$ 10.00 for first book, \$5.00 for each additional book. If an order cannot be fulfilled within 90 days, payment will be refunded upon request. Prices are payable in US currency or its equivalent.

Part of **SPRINGER NATURE**