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Volume 118
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Proceedings of the X G.I.F.T. International Seminar on Theoretical Physics Held at Jaca, Huesca (Spain) June 1979
Editors: J. L. Alonso, R. Tarrach
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Volume 119
Nuclear Spectroscopy

Lecture Notes of the Workshop Held at Gull Lake, Michigan, August 27 – September 7, 1979
Editors: G. F. Bertsch, D. Kurath
1980. VII, 250 pages
DM 33,–; approx. US $ 19.50   ISBN 3-540-09970-0

The papers contained in this volume review the present status of nuclear structure physics. Nuclear theory's most important tool, the shell model representation, is described in contributions by Kurath, Bertsch and Faessler. Iachello's paper describes the use of group theory to simplify the discription of complex spectra, an application that has developed into a high art. For spectral regions beyond the grasp of either the shell model or group theory, statistical considerations have an applicability that is only recently fully understood, as French explains. Brown's lectures cover the foundations of nuclear theory in the nonrelativistic reduction of nucleon-nucleon dynamics to derive on effective Hamilitonian. An appendix by Bertsch, Zamick and Mekjian brings to light numerous open problems.

Volume 120
Nonlinear Evolution Equations and Dynamical Systems

Proceedings of the Meeting Held at the University of Lecce June 20–23, 1979
Editors: M. Botti, F. Pempinelli, G. Soliani
1980. VI, 368 pages
DM 43,–; approx. US $ 25.40   ISBN 3-540-09971-9

The contributions to this volume discuss recent advances and future trends in the theory of nonlinear evolution equations, covering both their mathematical and physical aspects. The papers are expanded versions of talks presented at the conference which include more recent developments. Among the topics to be found in this volume are: the geometrical aspects of nonlinear solvable equations and the Bäcklund transformation – analytical techniques for finding solutions; the relation of the geometry of the dual spaces of Lie algebras to the complete integrability of certain nonlinear evolutions, the properties of special functions related to certain solutions; reduction techniques for matrix equations; applications to plasma turbulence; the relation of the inverse scattering problem to arithmetics and transcendental numbers, and applications to fundamental equations of classical and quantum physics.

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