

Zeitschrift: Helvetica Physica Acta
Band: 70 (1997)
Heft: 5

Buchbesprechung: Structure of dynamical systems : a symplectic view of physics [J.-M. Souriau]
Autor: [s.n.]

Nutzungsbedingungen

Die ETH-Bibliothek ist die Anbieterin der digitalisierten Zeitschriften. Sie besitzt keine Urheberrechte an den Zeitschriften und ist nicht verantwortlich für deren Inhalte. Die Rechte liegen in der Regel bei den Herausgebern beziehungsweise den externen Rechteinhabern. [Siehe Rechtliche Hinweise.](#)

Conditions d'utilisation

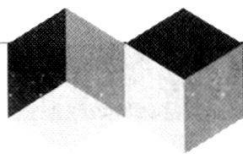
L'ETH Library est le fournisseur des revues numérisées. Elle ne détient aucun droit d'auteur sur les revues et n'est pas responsable de leur contenu. En règle générale, les droits sont détenus par les éditeurs ou les détenteurs de droits externes. [Voir Informations légales.](#)

Terms of use

The ETH Library is the provider of the digitised journals. It does not own any copyrights to the journals and is not responsible for their content. The rights usually lie with the publishers or the external rights holders. [See Legal notice.](#)

Download PDF: 30.03.2025

ETH-Bibliothek Zürich, E-Periodica, <https://www.e-periodica.ch>



MATHEMATICAL PHYSICS • DIFFERENTIAL GEOMETRY • QUANTUM MECHANICS

PM 149 • Progress in Mathematics

J.-M. Souriau, Université de Provence

Structure of Dynamical Systems A Symplectic View of Physics

Translated: **C.H. Cushman-de Vries**

Translation Editors: **R.H. Cushman**, Universiteit Utrecht, The Netherlands /

G.M. Tuynman, Université des Sciences et Techniques de Lille, France

1997. Approx. 400 pages. Hardcover

Approx. DM 148.–/öS 1081.–/sFr.128.–

ISBN 3-7643-3695-1

This book is addressed to graduate students and researchers in mathematics who are interested in mathematical and theoretical physics, symplectic geometry, mechanics, and (geometric) quantization. The aim of the book is to treat all three basic theories of physics namely, classical mechanics, statistical mechanics, and quantum mechanics from the same perspective, that of symplectic geometry, thus showing the unifying power of the symplectic geometric approach. Reading this book will give the reader a deep understanding of the interrelationships between the three basic theories of physics.

The first two chapters provide the necessary mathematical background in differential geometry, Lie groups, and symplectic geometry. In Chapter 3 a coherent symplectic description of Galilean and relativistic mechanics is given, culminating in the classification of elementary particles (relativistic and non-relativistic, with or without spin, with or without mass). In Chapter 4 statistical mechanics is put into symplectic form, finishing with a symplectic description of the kinetic theory of gases and the computation of specific heats. Finally in Chapter 5 the author presents his theory of geometric quantization. Highlights of this chapter are the derivation of the various wave equations and the construction of the Fock space.

CONTENTS:

*Introduction • Differential Geometry • Symplectic Geometry • Mechanics •
Statistical Mechanics • A method of quantization*

For orders originating from all over
the world except USA and Canada:
Birkhäuser Verlag AG
P.O. Box 133
CH-4010 Basel/Switzerland
Fax: +41/61/205 07 92
e-mail: farnik@birkhauser.ch

For orders originating in the
USA and Canada:
Birkhäuser
333 Meadowland Parkway
USA-Secaucus, NJ 07094-2491
Fax: +1 201 348 4033
e-mail: orders@birkhauser.com

Birkhäuser



Birkhäuser Verlag AG
Basel · Boston · Berlin

VISIT OUR HOMEPAGE <http://www.birkhauser.ch>

Prices are subject to change without notice. 6/97