



# Symmetries in Atomic Nuclei [ From Isospin to Supersymmetry /

Frank, Alejandro.,

author.

aut.

<http://id.loc.gov/vocabulary/relators/aut>

Springer International Publishing :

Imprint: Springer,

2019

Monografía

The revised edition of this established work presents an extended overview of recent applications of symmetry to the description of atomic nuclei, including a pedagogical introduction to symmetry concepts using simple examples. Following a historical overview of the applications of symmetry in nuclear physics, attention turns to more recent progress in the field. Special emphasis is placed on the introduction of neutron-proton and boson-fermion degrees of freedom. Their combination leads to a supersymmetric description of pairs and quartets of nuclei. Expanded and updated throughout, the book now features separate chapters on the nuclear shell model and the interacting boson model, the former including discussion of recent results on seniority in a single-j shell. Both theoretical aspects and experimental signatures of dynamical (super)symmetries are carefully discussed. This book focuses on nuclear structure physics, but its broad scope makes it suitable for final-year or post-graduate students and researchers interested in understanding the power and beauty of symmetry methods in physics. Review of the 1st Edition: "The subject of this book, symmetries in physical systems, with particular focus on atomic nuclei, is of the utmost importance in modern physical science. In contrast to most treatments, frequently characterized by fearsome formalism, this book leads the reader step-by-step, in an easily understandable way, through this fascinating field...this book is remarkably accessible to both theorists and experimentalists. Indeed, I view it as essential reading for experimental nuclear structure physicists. This is one of the finest volumes on this subject I have ever encountered." Prof. R.F. Casten, Yale University

<https://rebiunoda.pro.baratznet.cloud:28443/OpacDiscovery/public/catalog/detail/b2FpOmNlbGVicmF0aW9uOmVzLmJhcmF0ei5yZW4vMjQ3MjU1Njk>

**Título:** Symmetries in Atomic Nuclei [Recurso electrónico] From Isospin to Supersymmetry by Alejandro Frank, Jan Jolie, Pieter Van Isacker

**Edición:** 2nd ed. 2019

**Editorial:** Cham Springer International Publishing Imprint: Springer 2019

**Descripción física:** 1 online resource (XIII, 209 p. 62 illus., 5 illus. in color.)

**Mención de serie:** Springer Tracts in Modern Physics 0081-3869 230

**Contenido:** Chapter1: Symmetry and Supersymmetry in Quantal Many-Body Systems -- Chapter2: Symmetry in Nuclear Physics: The nuclear shell model -- Chapter3: Symmetry in Nuclear Physics: The interacting boson model -- Chapter4: Supersymmetry in Nuclear Physics -- Chapter5: Symmetries with Neutrons and Protons -- Chapter6: Supersymmetries with Neutrons and Protons -- Chapter7: Supersymmetry and Supersymmetric Quantum Mechanics -- Chapter8: Conclusion

**ISBN:** 3-030-21931-3

**Autores:** Jolie, Jan., author. aut. <http://id.loc.gov/vocabulary/relators/aut> Van Isacker, Pieter., author. aut. <http://id.loc.gov/vocabulary/relators/aut>

**Enlace a formato físico adicional:** 3-030-21930-5

**Punto acceso adicional serie-Título:** Springer Tracts in Modern Physics 0081-3869 230

---

### **Baratz Innovación Documental**

- Gran Vía, 59 28013 Madrid
- (+34) 91 456 03 60
- [informa@baratz.es](mailto:informa@baratz.es)