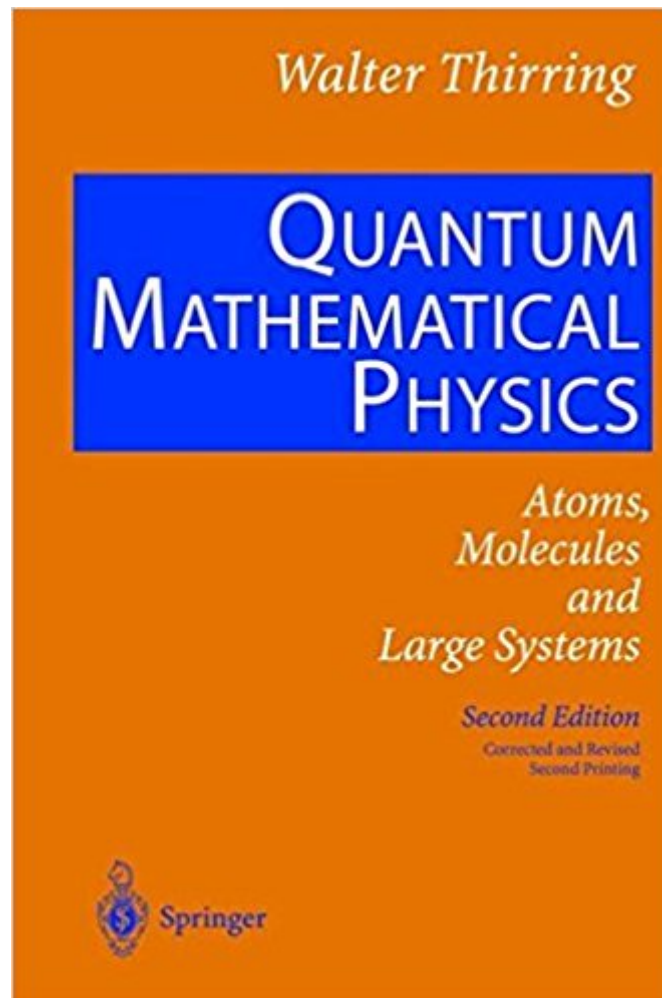




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Quantum Mathematical Physics



Synopsis

This book is a new edition of Volumes 3 and 4 of Walter Thirring's famous textbook on mathematical physics. The first part is devoted to quantum mechanics and especially to its applications to scattering theory, atoms and molecules. The second part deals with quantum statistical mechanics examining fundamental concepts like entropy, ergodicity and thermodynamic functions.

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a mathematical physicist." (Prof. A.I. Solomon, Contemporary Physics, Vol. 46 (4), 2005) "This volume will serve as an excellent source book for the mathematical basis of the many recent advances in quantum mechanics. It will also serve as an excellent textbook. Each chapter is chock full of mathematical derivations and proofs but perhaps the most interesting part of each proof is the following section entitled 'Remarks' sections which are full of interesting details, ideas, drawbacks, comments, and references. As is usually the case with Springer-Verlag, this book has been beautifully produced." (Fernande Grandjean and Gary J. Long, Physicalia, Vol. 25 (3), 2003)

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Thirring presents a logical mathematical foundation for quantum physics. This book is meant for theorists who desire a rigorous presentation and who already have a strong math background, especially in functional analysis. Naturally, much of the discussion centres on the properties of a Hilbert space (ie. a complete inner product space). Simpler texts in quantum mechanics might often state that the wavefunctions or operators reside in a Hilbert space, but really don't explore more the consequences. Whereas Thirring takes you much deeper into this realm.

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