



# The Quantum Theory of Fields: Volume 1, Foundations

By Steven Weinberg

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Available for the first time in paperback, *The Quantum Theory of Fields* is a self-contained, comprehensive, and up-to-date introduction to quantum field theory from Nobel Laureate Steven Weinberg. Volume I introduces the foundations of quantum field theory. The development is fresh and logical throughout, with each step carefully motivated by what has gone before. After a brief historical outline, the book begins with the principles of relativity and quantum mechanics, and the properties of particles that follow. Quantum field theory emerges from this as a natural consequence. The classic calculations of quantum electrodynamics are presented in a thoroughly modern way, showing the use of path integrals and dimensional regularization. It contains much original material, and is peppered with examples and insights drawn from the author's experience as a leader of elementary particle research. Exercises are included at the end of each chapter.

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## The Quantum Theory of Fields: Volume 1, Foundations By Steven Weinberg Bibliography

- Rank: #716193 in eBooks
- Published on: 1995-06-30
- Released on: 1995-06-30
- Format: Kindle eBook

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#### Review

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"...for over 20 years there has been no good modern textbook on [quantum field theory]. For all that time, Steven Weinberg has been promising to write one. That he has finally done it...is cause for celebration among those who try to teach and try to learn the subject. Weinberg's book is for serious students of field theory....[I]t is the first textbook to treat quantum field theory the way it is used by physicists today." Howard Georgi, Science

"...provides an impressively lucid and thorough presentation of the subject from this modern viewpoint....Weinberg manages to present difficult topics with richness of meaning and marvellous clarity. Full of valuable insights, his treatise is sure to become a classic..." Nature

"...a self-contained, comprehensive introduction to quantum field theory." Book News, Inc.

"...beautifully produced and meticulously edited...and it is a real bargain in price. If you want to learn quantum field theory, or have already learned it and want to have a definitive reference at hand, purchase this book." O.W. Greenberg, Physics Today

"I would recommend it to students who have completed a first course in field theory and hope that many of my colleagues will read it as well. Weinberg leads us to a frontier rich in possibilities. This is an optimistic book, written with much respect for ideas and nature--and for tools." Chris Quigg, Science

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