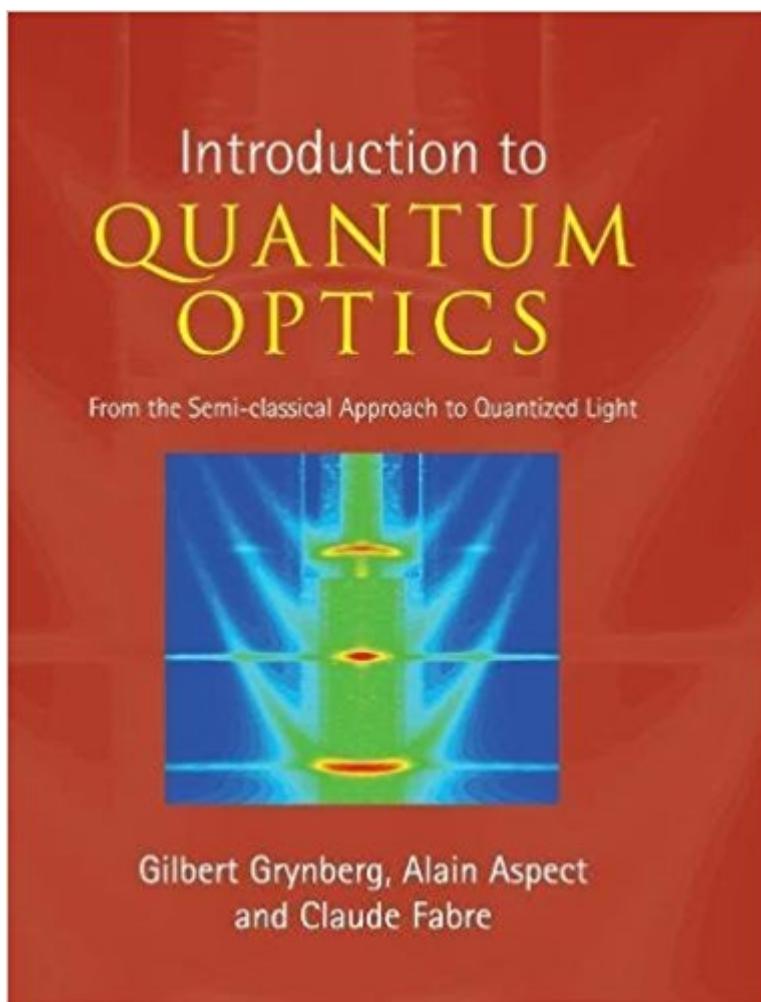


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Introduction To Quantum Optics: From The Semi-classical Approach To Quantized Light



Gilbert Grynberg, Alain Aspect
and Claude Fabre



Synopsis

Covering a number of important subjects in quantum optics, this textbook is an excellent introduction for advanced undergraduate and beginning graduate students, familiarizing readers with the basic concepts and formalism as well as the most recent advances. The first part of the textbook covers the semi-classical approach where matter is quantized, but light is not. It describes significant phenomena in quantum optics, including the principles of lasers. The second part is devoted to the full quantum description of light and its interaction with matter, covering topics such as spontaneous emission, and classical and non-classical states of light. An overview of photon entanglement and applications to quantum information is also given. In the third part, non-linear optics and laser cooling of atoms are presented, where using both approaches allows for a comprehensive description. Each chapter describes basic concepts in detail, and more specific concepts and phenomena are presented in 'complements'.

Book Information

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Customer Reviews

"The advantage of this book is to give both [the semi-classical and the full quantum] approaches, starting with the first, illustrated by several simple examples, and introducing progressively the second, clearly showing why it is essential for understanding certain phenomena ... I believe that this challenge to present and to illustrate both approaches in a single book has been taken up successfully ... I have the highest admiration for [the authors'] enthusiasm, their scientific rigor, their ability to give simple and precise physical explanations, and their quest to illuminate clearly the difficult points of the subject without oversimplification." Claude Cohen-Tannoudji, from the Foreword "In this long-awaited and genuinely very impressive book, developed from an earlier

Introduction aux Lasers et ... l'Optique Quantique, and completed in recent years following the death of Gilbert Grynberg, these two semiclassical and quantum optical forms of theory are comprehensively surveyed; their applications are detailed and analysed, and their relative strengths made clear without prejudice to either side. It is a splendid achievement, as befits its authoritative authorship, a masterpiece that I have nothing but admiration for. Every section has been lovingly crafted, the text is beautifully constructed and the theory explained more comprehensibly than almost any other text I could name. Each section is graced by numerous insightful and comments from the authors, giving the reader the impression of guidance by the hand of a teacher you can utterly trust. I am certain that this beautifully produced and written book, with an apparently faultless production, is destined to be a classic. It doesn't need my recommendation, but I give it gladly and whole-heartedly." David Andrews, Contemporary Physics

Covering a number of important subjects in quantum optics, this textbook is an excellent introduction for advanced undergraduate and beginning graduate students, and will familiarize readers with the most recent advances in the field.

Great

A very good book!

So this book is very french. it follows the same format as the cohen-tannoudji QM set, and it covers an updated version of the cohen-tannoudji book on atom-photon interactions so popular in quantum-optics/AMO physics. This is like a digested updated version of that textbook. I find it pretty lucid and slightly more user friendly.

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