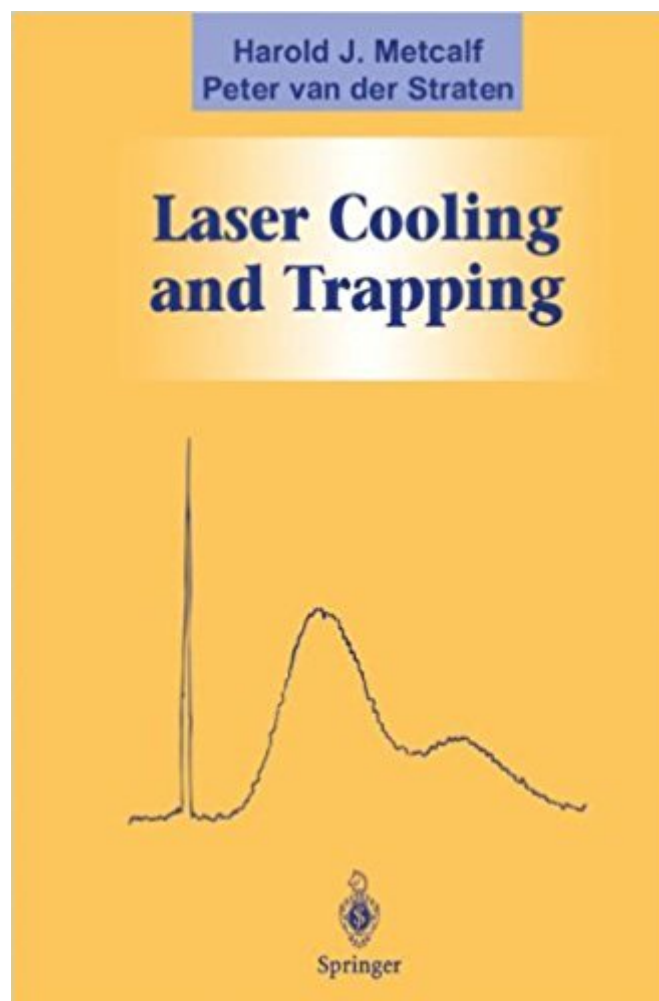




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Laser Cooling And Trapping (Graduate Texts In Contemporary Physics)



Synopsis

Intended for advanced undergraduates and beginning graduates with some basic knowledge of optics and quantum mechanics, this text begins with a review of the relevant results of quantum mechanics, before turning to the electromagnetic interactions involved in slowing and trapping atoms and ions, in both magnetic and optical traps. The concluding chapters discuss a broad range of applications, from atomic clocks and studies of collision processes, to diffraction and interference of atomic beams at optical lattices and Bose-Einstein condensation.

Book Information

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intended use, which is to guide newcomers into the field of laser cooling and trapping, the book does a superb job. The book is well placed to evolve with the field for many years to come."

Physics Today

The book is okay. I am collaborating on a research venture and wanted to sharpen my knowledge on this topic. I find this book helpful.

Laser cooling and trapping techniques have given researchers new tools to explore the atom's dynamics and control. The book gives a good introduction to the forces that arise when an atom interacts with a light (laser) field, and puts a lot of emphasis on giving the reader an excellent idea of what's going on when atoms and photons interact. Rather than giving all the details of the mathematical and quantum mechanics background that is needed to understand the subject the authors concentrate on giving a clearer picture of the real physics involved. The book starts with a review of the quantum mechanics principles used to understand laser cooling and trapping, which serves as a good remainder for a person who already has a basic grasp of it. Although all the mathematical analysis that shows how the formulas and mathematical expressions are derived is not done in the book, the presentation is sufficient to guide the readers interested in it do the work by themselves. The book also has an excellent reference guide that an interested person can use to get all the mathematical and experimental details on the field.

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