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With over thirty years of experience in research and teaching theoretical optics, the author goes way beyond the scope of traditional lectures, enabling readers to keep up with the current state of knowledge. Both in terms of content and presentation, this is essential reading for graduate and PhD students and a valuable reference for researchers.

Hartmann Römer received his Ph.D. degree from the University of Bonn in 1970, where he also completed his habilitation. He held Postdoc positions at the Weizmann Institute of Science in Rehovot, Israel, and at CERN in Geneva. In 1979, Professor Römer was appointed to a full professor for theoretical physics at the University of Freiburg, where he still teaches. His research interests include particle theory and quantum field theory, in particular geometrical and topological methods, symplectic geometry, quantization theory, classical limit and short wave asymptotics.
NEW TO EDITION

- chapter on quantum optics will be updated and linked more thoroughly to the other chapters of the book
- update of subchapter on holographic storage media

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