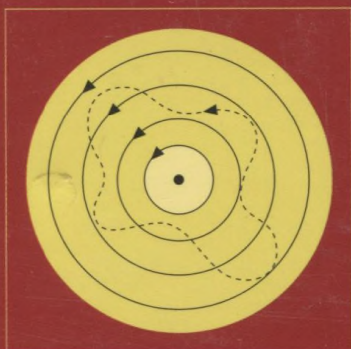




An accessible introduction to advanced quantum theory, this graduate-level textbook focuses on its practical applications rather than on mathematical technicalities. It treats real-life examples, from topics ranging from quantum transport to nanotechnology, to equip students with a toolbox of theoretical techniques.

Beginning with second quantization, the authors illustrate its use with different condensed matter physics examples. They then explain how to quantize classical fields, with a focus on the electromagnetic field, taking students from Maxwell's equations to photons, coherent states, and absorption and emission of photons. Following this is a unique master-level presentation on dissipative quantum mechanics, before the textbook concludes with a short introduction to relativistic quantum mechanics, covering the Dirac equation and a relativistic second quantization formalism.

The textbook includes 70 end-of-chapter problems. Solutions to some problems are given at the end of the chapter, and full solutions to all problems are available for instructors at www.cambridge.org/9780521761505.

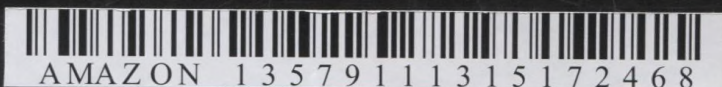
Yuli V. Nazarov is a Professor in the Quantum Nanoscience Department, the Kavli Institute of Nanoscience, Delft University of Technology. He has worked in quantum transport since the emergence of the field in the late 1980s.

Jeroen Danon is a Researcher at the Dahlem Center for Complex Quantum Systems, Free University of Berlin. He works in the fields of quantum transport and mesoscopic physics.

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