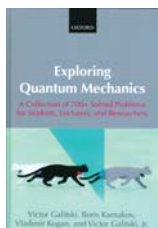


collaboration with Karnakov. Alongside a highly productive research career, Galitski created the earlier work while struggling against political oppression under Joseph Stalin and the expanded version while fighting cancer of a more literal form. Three decades after the publication of the first Russian edition in 1981, his grandson, Galitski Jr, took on the long process of editing, translating, and expanding the problems. The result is a gem of old-world craftsmanship, well worth a place alongside the other classic texts of quantum mechanics in any physicist's library.

The problems cover topics in quantum mechanics at considerable depth, across a wide range of difficulty and sophistication. Some are simple exercises, many are suitable for advanced undergraduates, and the majority are suitable for the graduate level or beyond. Although I can't claim to have checked every problem and solution, the ones I sampled showed care and attention to detail. In a few cases I might have expanded on what the book provides in preparing a problem set or solution set for a class, but those problems tended to be the more straightforward ones; if such brevity allowed for more of the book's 912 pages to be devoted to detailed discussions of the more complex and subtle problems, it's a choice I wholeheartedly applaud.

Each chapter begins with a brief summary of key concepts and formulas, which serves as a useful reference for the subsequent problems and solutions. The presentation closely parallels a standard full-year graduate quantum mechanics course and provides a comprehensive range of problems for each topic. There is a particularly extensive selection of problems in atomic and nuclear physics, often connecting closely to experimental measurements. I was most impressed, however, by the sheer inventiveness and creativity required to formulate a wide range of problems that illuminate the many subtle facets of quantum mechanics but for which the calculations involved nonetheless remain tractable.

As Galitski Jr points out in the preface, this sort of thorough, detailed collection is a product of "people living and working in completely different times, and they were quite different from us, today's scientists: with their attention spans undiminished by constant exposure to email, internet, and television, and with their minds free of petty worries about citation counts, in-



stances, and rankings, they were able to devote 100% of their attention to science and take the time to focus on difficult problems that really mattered."

Ironically, where today's technology may have the most to offer to education is in managing large-scale collections of specialized knowledge of the sort found in this book. Although I'm doubtful about the value of the internet in replacing the teacher, I think it has a lot to offer toward upgrading the textbook, and I am frequently struck (especially while making up problem sets and exams) by how valuable it would be to assemble a large-scale online database of carefully crafted problems and solutions. Instructors around the world could contribute those cherished problems each of us has developed, typographical errors could be eliminated by crowdsourcing, and problems could be efficiently indexed by difficulty level and subject. All it would take to get such a project off the ground would be to assemble an initial critical mass of solved problems. Perhaps a member of the next generation will come along to take up that challenge.

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