IOP Concise Physics

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Chapter 8

Bibliography

In keeping with the pedagogical and concise nature of this monograph, the following areas present a brief list of books useful for further study and development of the basic ideas of quantum mechanics.

Mathematical background

The mathematical methods used in quantum mechanics cover a broad range of concepts. The following books present most of these concepts, if not all, in a form that is accessible to physical scientists. In alphabetical order of authors they include: Arfken G, Weber H-J and Harris F 2013 *Mathematical Methods for Physicists* 7th edn (Massachusetts: Elsevier); Boas M 2006 *Mathematical Methods in the Physical Sciences* (New Jersey: Wiley); Byron F and Fuller R 1992 *Mathematics of Classical and Quantum Physics* (New York: Dover); Hassani S 1999 *Mathematical Physics* (New York: Springer); and Kusse B and Westwig E 1998 *Mathematical Physics, Applied Mathematics for Scientists and Engineers*, (New York: Wiley Interscience). Group theory is specifically developed in: Sternberg S 1994 *Group Theory and Physics* (Cambridge: Cambridge University Press) and Wybourne B 1974 *Classical Groups for Physicists* (New York: Wiley). In addition, many of the introductory texts on quantum mechanics contain presentations of the mathematics used in them.

Physics background

Classical mechanics is presented in: Taylor J R 2005 *Classical Mechanics* (New Jersey: University Science Books) and Goldstein H, Poole C Jr and Safko J 2001 *Classical Mechanics* 3rd edn (Reading, MA: Addison-Wesley). Classical electrodynamics is presented in: Eyges L 1972 *The Classical Electromagnetic Field* (New York: Dover); Greiner W 1998 *Classical Electrodynamics* (New York: Springer); Jackson J D 1998 *Classical Electrodynamics* 3rd edn (New York: Wiley); and Westgard J 1997 *Electrodynamics: A Concise Introduction* (New York: Springer). Classical statistical mechanics is presented in: Greiner W, Neise L and Stöcker H 1995

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Thermodynamics and Statistical Mechanics (New York: Springer) and McQuarrie D 1973 *Statistical Thermodynamics* (Mill Valley, California: University Science Books).

Basic quantum mechanics

There are many excellent texts for the student interested in further study of the diverse aspects, applications, and philosophical underpinnings of basic quantum mechanics, which includes applications to perturbation theory and scattering not presented in this text. The following are especially recommended for additional material and examples: Cohen–Tannoudji C, Diu B and Laloë F 1977 *Quantum Mechanics* vol I and II (New York: Wiley); Feynman R, Leighton R and Sands M 1965 *The Feynman Lectures on Physics* vol III (Reading: Addison-Wesley); Galitski V, Karnakov B, Kogan V and Galitski V Jr 2013 *Exploring Quantum Mechanics* (Oxford: Oxford Press); Greiner W 1994 *Quantum Mechanics: An Introduction* 3rd edn (New York: Springer); Messiah A 2017 *Quantum Mechanics* vol I and II (New York: Dover); Schiff L and Bandhyopadhyay J 2014 *Quantum Mechanics* 4th edn (New York: McGraw-Hill); and Schwabl F 1995 *Quantum Mechanics* 2nd edn (New York: Springer).

Contemporary quantum mechanics

The development of quantum mechanics continues as a vigorous area of research. The following are recommended for alternate formalisms and applications to areas of contemporary research: Kleinert H 2004 *Path Integrals in Quantum Mechanics, Statistics, Polymer Physics, and Financial Markets* 3rd edn (Singapore: World Scientific); Nielsen M and Chuang I 2000 *Quantum Computation and Quantum Information* (Cambridge: Cambridge University Press); and Schlosshauer M 2014 The quantum-to-classical transition and decoherence *Handbook of Quantum Information* ed M Aspelmeyer, T Calarco, J Eisert and F Schmidt-Kaler (Berlin/Heidelberg: Springer).