

Advanced Quantum Mechanics (Short Option S18)

Recommended textbooks and monographs (M)

1. L.D. Landau & E.M. Lifshitz, "Quantum Mechanics", vol. III of "Course in Theoretical Physics", Butterworth-Heinemann; 3rd edition (1981), especially Chapter III (Schrodinger's equation), Chapter XVII (Elastic collisions): §123-135.
2. J.J. Sakurai, "Modern Quantum Mechanics", Addison-Wesley (1994) (or any edition), especially Section 7.
- 3 (M). T. Wu and T. Ohmura, "Quantum Theory of Scattering", Prentice Hall (1962), Section I
- 4 (M). J. Taylor, "Scattering Theory: The Quantum Theory of Nonrelativistic Collisions", Dover (2006) (or any edition).
5. J. Bjorken and S. Drell, "Relativistic Quantum Mechanics", McGraw Hill (1965).
6. A.N.Kolmogorov and S.V.Fomin, "Elements of the theory of functions and functional analysis", Dover (1999).

Additional titles

1. Sutherland, Bill, "Beautiful models: 70 years of exactly solved quantum many-body problems", World Scientific (2004).
2. Reed, M. and Simon, B., "Methods of modern mathematical physics", Academic Press (1972-1978): vol I (Functional analysis), vol II (Fourier analysis, self-adjointness), vol III (Scattering theory), vol IV (Analysis of operators).
3. Kato, T. , "Perturbation Theory for Linear Operators", Springer (1995).
4. Frautschi, S., "Regge Poles and S-Matrix Theory", Literary Licensing, LLC (2012).
5. De Alfaro, V., Regge, T., "Potential scattering", North-Holland Pub. Co. (1965).
6. Eden, R.J., "The Analytic S-matrix", Cambridge University Press (1998).