

INFORMATIONS

Contact

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Class schedule

13 lectures & tutorials (2 h each): <https://ernest.unistra.fr/>

Bibliography

- C. Cohen-Tannoudji, B. Diu, F. Laloë, *Quantum Mechanics* (Wiley-VCH, 2020)
- W. Greiner, *Quantum Mechanics – An Introduction* (Springer, 1989)
- D.J. Griffiths, *Introduction to Quantum Mechanics* (Cambridge University Press, 2018)
- L.D. Landau, E.M. Lifshitz, *Quantum Mechanics* (Pergamon Press, 1965)
- E. Merzbacher, *Quantum Mechanics* (Wiley & Sons, 1998)
- M. Le Bellac, *Quantum Physics* (Cambridge University Press, 2013)
- J.J. Sakurai, *Modern Quantum Mechanics* (Addison-Wesley, 1985)
- F. Schwable, *Quantum Mechanics* (Springer, 2007)
- R. Shankar, *Principles of Quantum Mechanics* (Springer, 1994)
- D. Tong, *Quantum Mechanics* (Cambridge University Press, 2025)
see also David Tong's [lecture notes](#) (University of Cambridge)

Course outline

1. Scattering in 1d

1.1 The free particle

1.2 The δ -function potential

1.2.1 Bound states and scattering states

1.2.2 The δ -function well

1.3 The finite square well

1.3.1 Bound states

1.3.2 Scattering states

2. The WKB approximation

2.1 The “classical” region

2.2 Tunneling

2.3 The connection formulas

to be continued...