



PHY1322 Quantum Physics 2

[45h+22.5h exercises] 6 credits

This course is taught in the 1st semester

Teacher(s): Jean Bricmont, Jean-Marc Gérard, Fabio Maltoni, Christophe Ringeval (coord.)
Language: French
Level: First cycle

Aims

This course for students who already received an introduction to quantum ideas and to 1D wave mechanics will include a systematic exposition to non-relativist quantum mechanics, - who establishes it on strong but not too formal theoretical bases and - that offer a tool useful for the study of fields like atomic and molecular physics, nuclear and solid state physics.

Main themes

- Wave mechanics : principals, Schrödinger equation, example
- Quantum mechanics : principals; quantum dynamics, symmetry
- Disturbance theory

Other information (prerequisite, evaluation (assessment methods), course materials recommended readings, ...)

Prerequisites: General physics II, 2nd part: Quantum - Mathematical methods of physics II

Support: This course is based on the book of E. Merzbacher, Quantum Mechanics, J. Wiley, N.Y. (1970), chapters 4, 8-10, 12-18. DIRAC P., The principles of quantum mechanics, 4th edition, Oxford, 1967. PAIS A., Inward Bound of Matter and Forces in the Physical World, Oxford, 1986. GALINDO A., PASCUAL P., Quantum Mechanics I, Springer Verlag, 1990. GALINDO A., PASCUAL P., Quantum Mechanics II, Springer Verlag, 1991. GASIROWICZ S., Quantum Physics, Wiley, 1974. MANDL F., Quantum Mechanics, Wiley, 1992.

Other credits in programs

FSA13BA	Troisième année de bachelier en sciences de l'ingénieur, orientation ingénieur civil	(6 credits)	Mandatory
MATR22	Deuxième année du programme conduisant au grade d'ingénieur civil en science des matériaux	(6 credits)	
PHYS13BA	Troisième année de bachelier en sciences physiques	(6 credits)	Mandatory