

Exercise 1

Listed below are 4 “Fundamental Questions” that will occupy us throughout the year. Let us consider a simple system consisting of a single particle.

- I. How does one describe the state of the particle ? (What variables etc.?)
- II. How does one describe physical observables (e.g. energy, momentum etc.) ?
- III. What happens when physical observables are measured ?
- IV. How does a system evolve in time ?

In order to understand what the questions even mean, first write down what you think the answers would be in classical physics. Then based on what you already know about the quantum world, try answering the questions in quantum physics.

Classical

Quantum

Question I

Question II

Question III

Question IV