

CHAPTER OVERVIEW

2: 1D Wave Mechanics

Even the simplest, 1D version of wave mechanics enables quantitative analysis of many important quantum-mechanical effects. The order of their discussion in this chapter is dictated mostly by mathematical convenience - going from the simplest potential profiles to more complex ones, so that we may build upon the previous results. However, I would advise the reader to focus more not on the math, but rather on the physics of the non-classical phenomena it describes, ranging from particle penetration into classically-forbidden regions, to quantum-mechanical tunneling, to the metastable state decay, to covalent bonding and quantum oscillations, to energy bands and gaps.

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