

Experimental Physics 3 - Em-Waves, Optics, Quantum mechanics

Lecture 27

Some dates in January and February

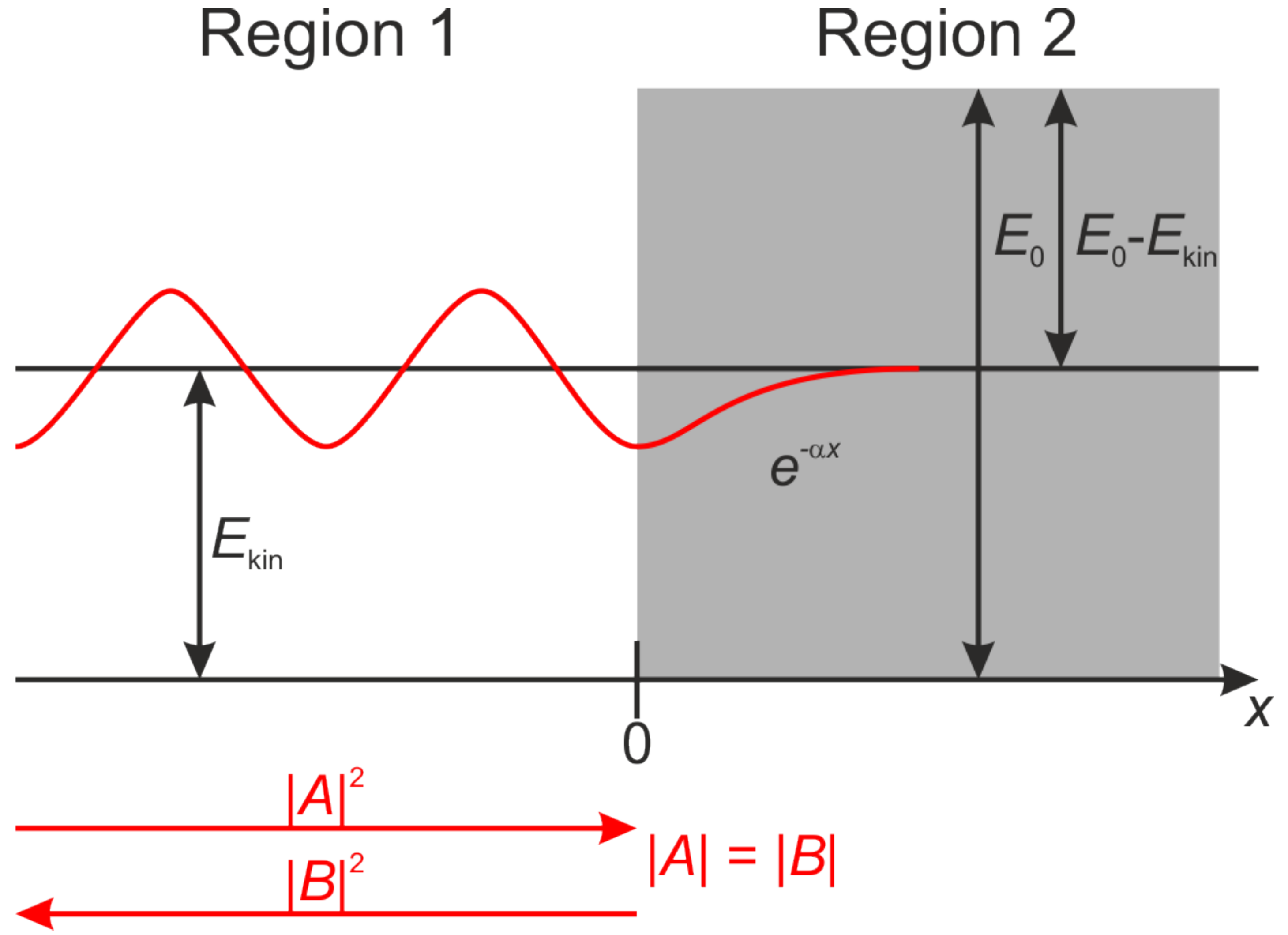
Mo	Tu	We	Th	Fr	Sa	Su
						1
2	3	4	5	6	7	8
9	10	11	12 Submission sheet 11	13	14	15
16	17	18	19 Submission mock exam	20	21	22
23	24	25	26 Submission sheet 12	27	28	29
30	31 Last Tuesday seminar	1	2 Last Thursday seminar Last lecture	3		

Exam: February 20, 2023, 9 am - 12 pm, 1 (one) DIN A4 page lettered

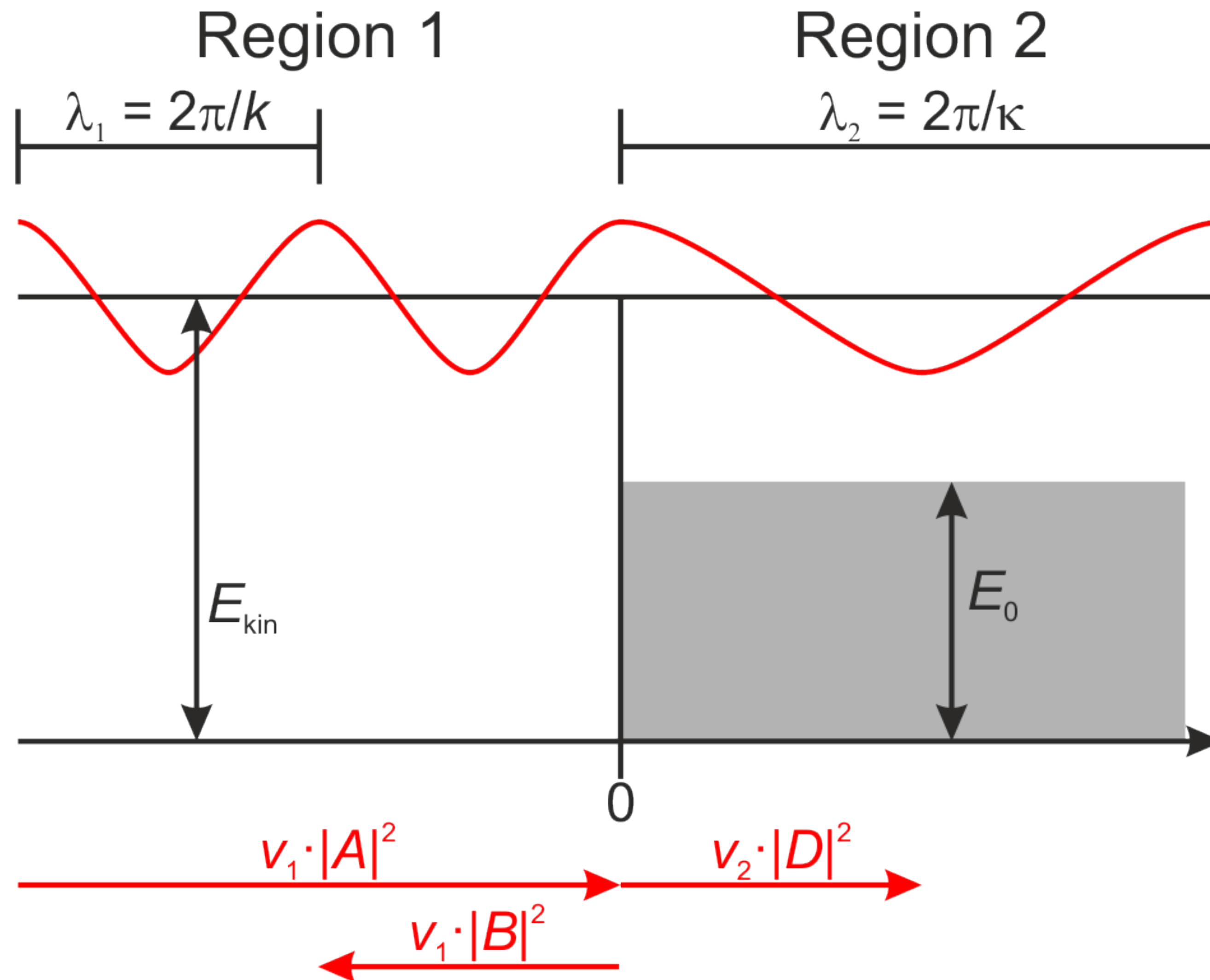
Re-exam: March 27, 2023, 9 am - 12 pm

The potential barrier

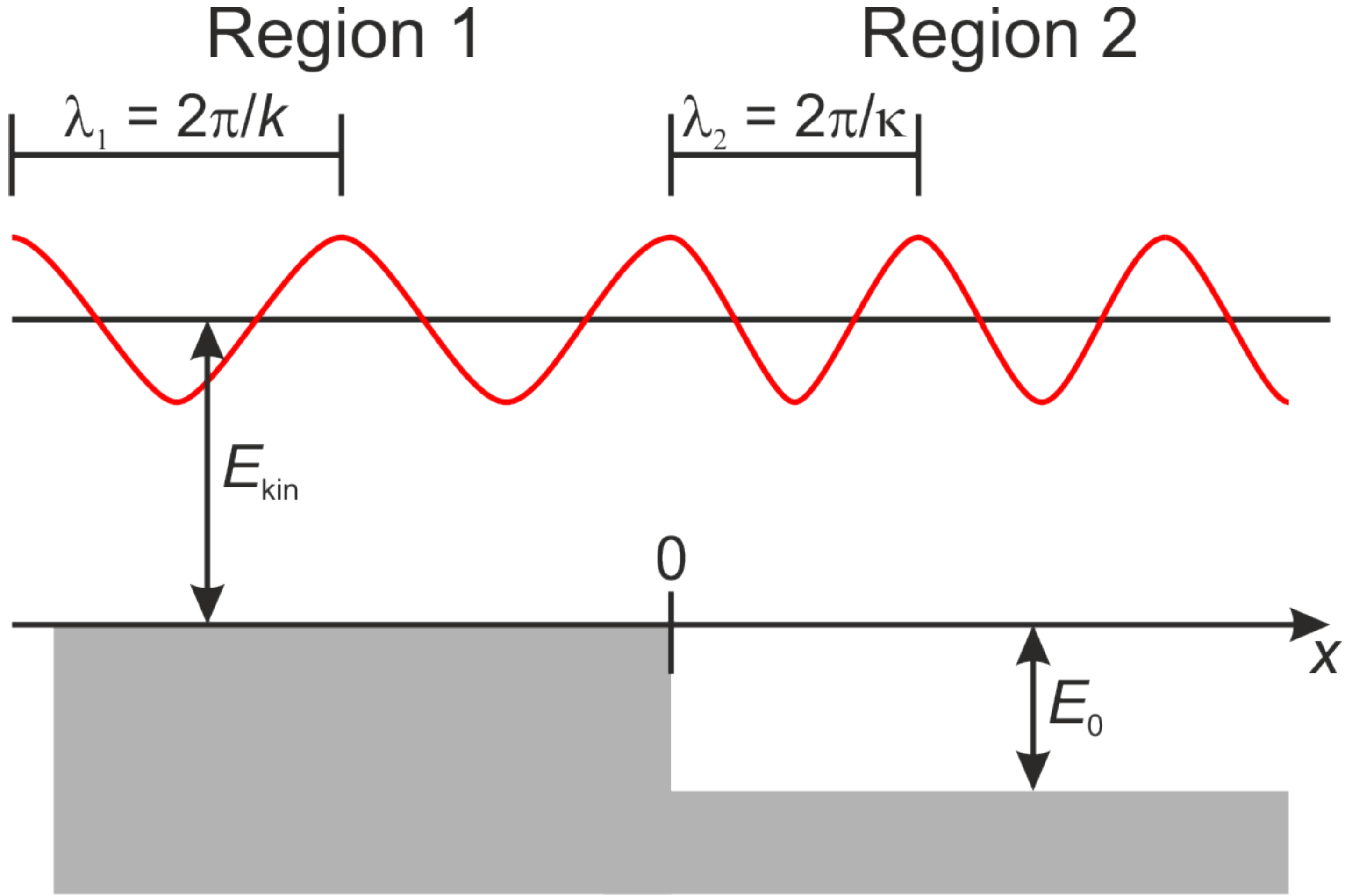
Recap - potential barrier $0 < E < E_0$



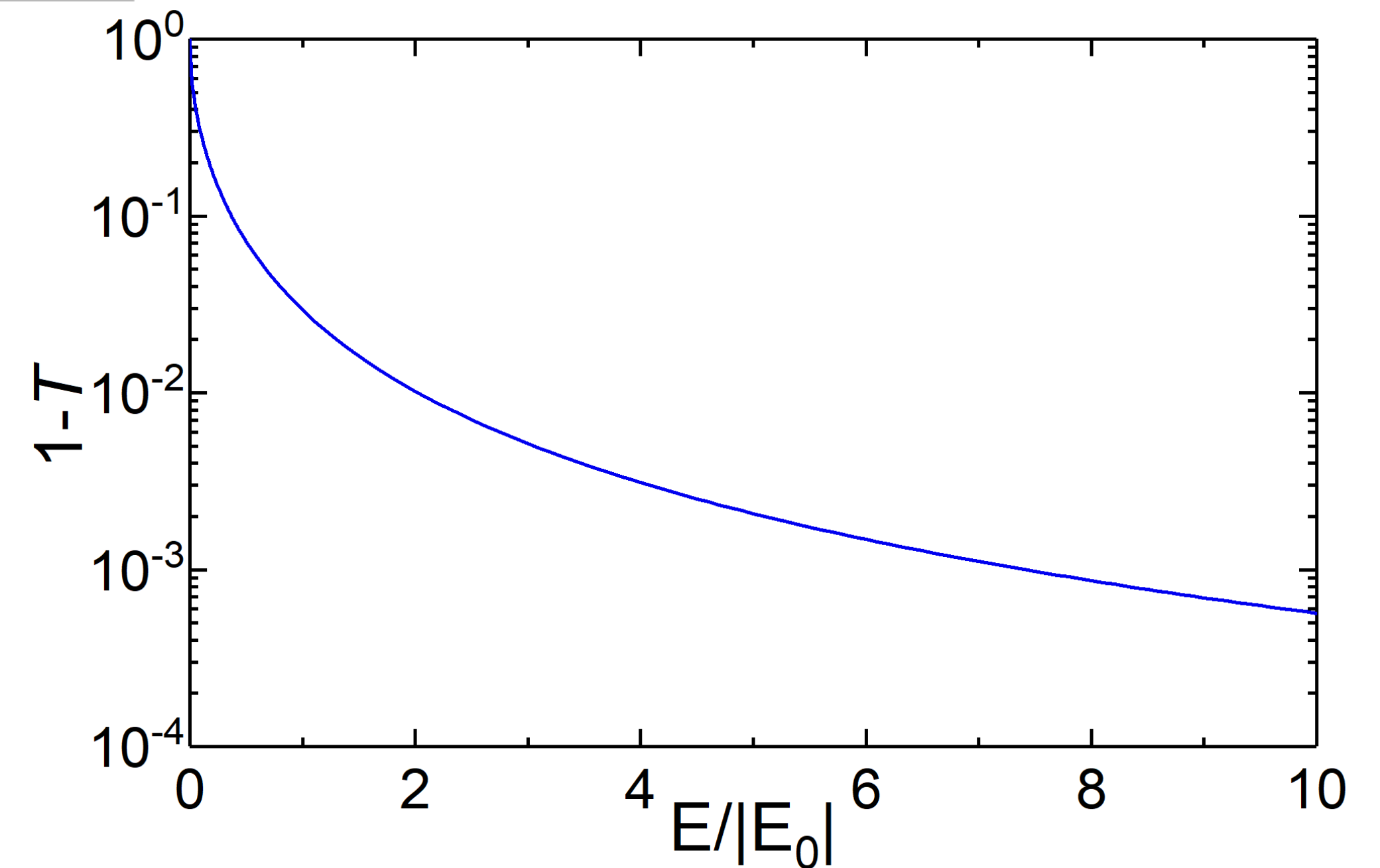
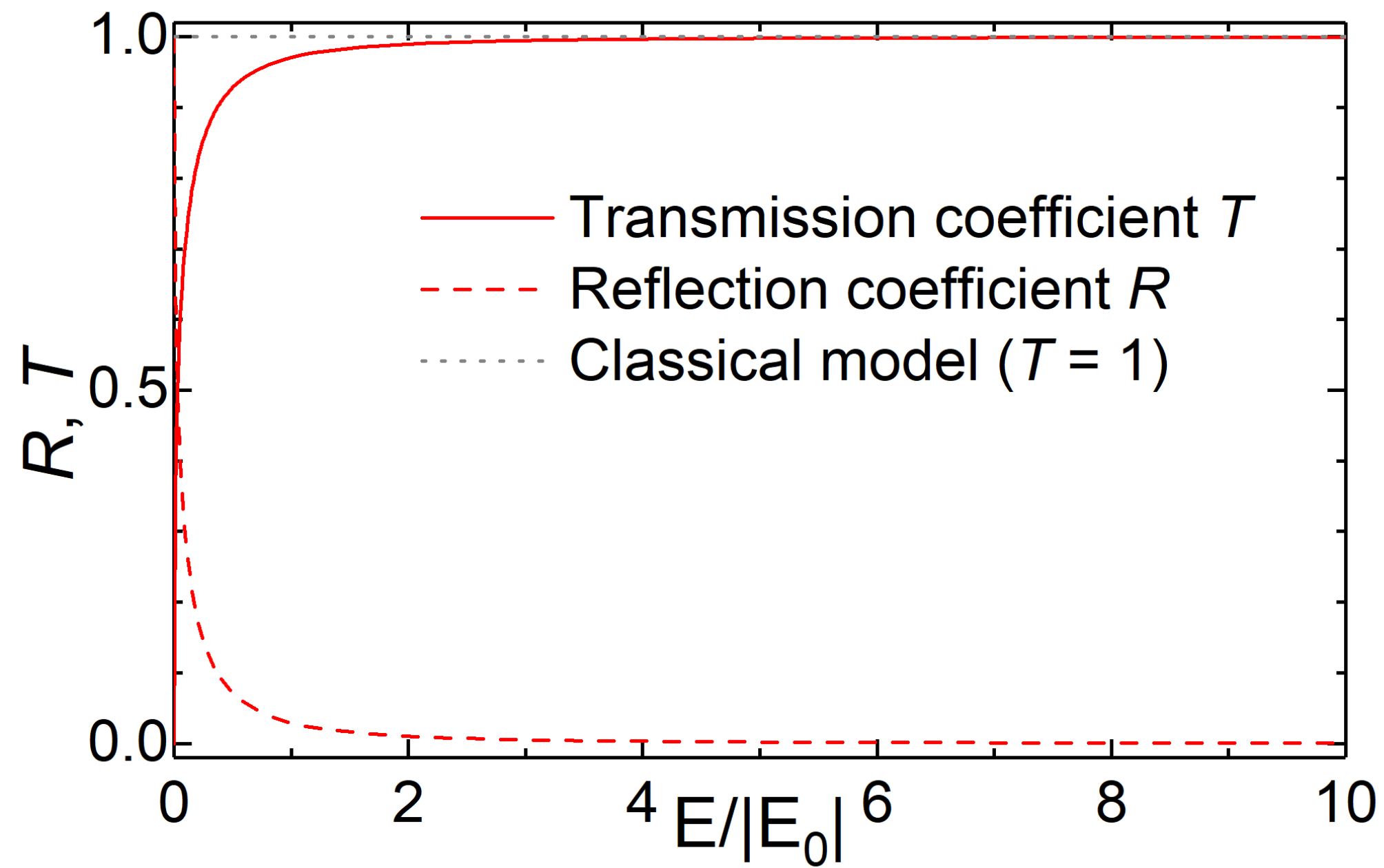
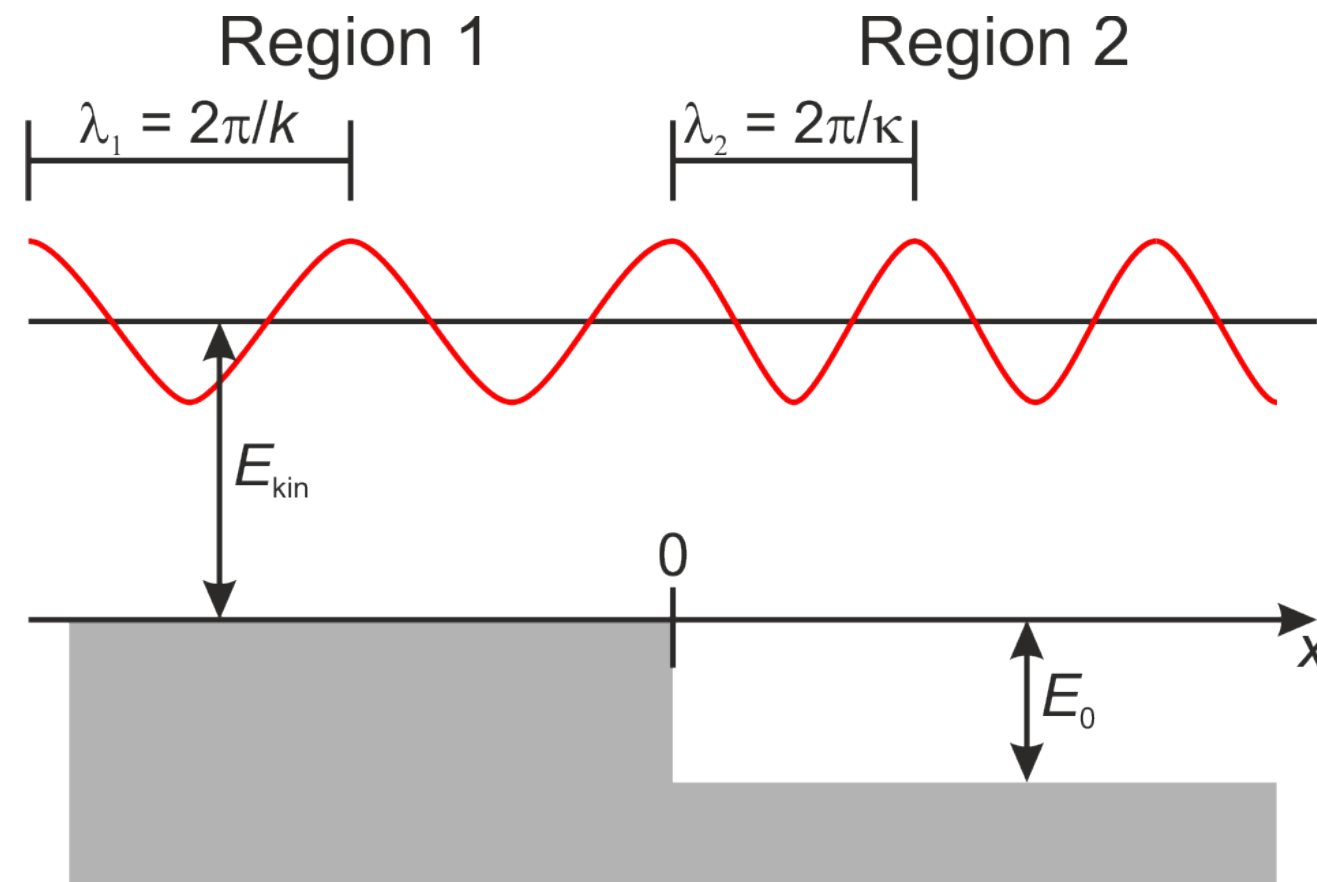
Recap - potential barrier $0 < E_0 < E$



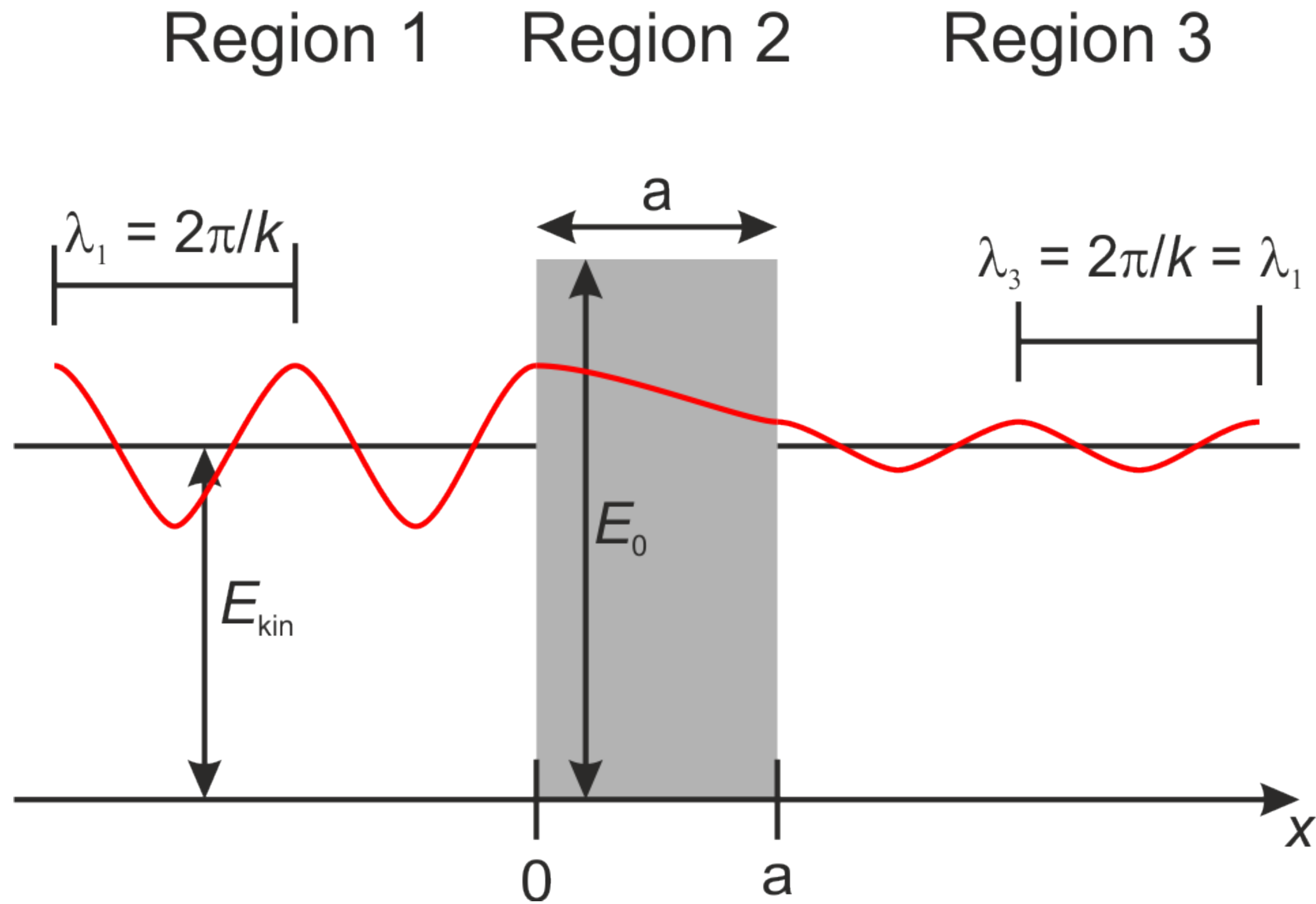
Recap - potential barrier $E_0 < 0 < E$



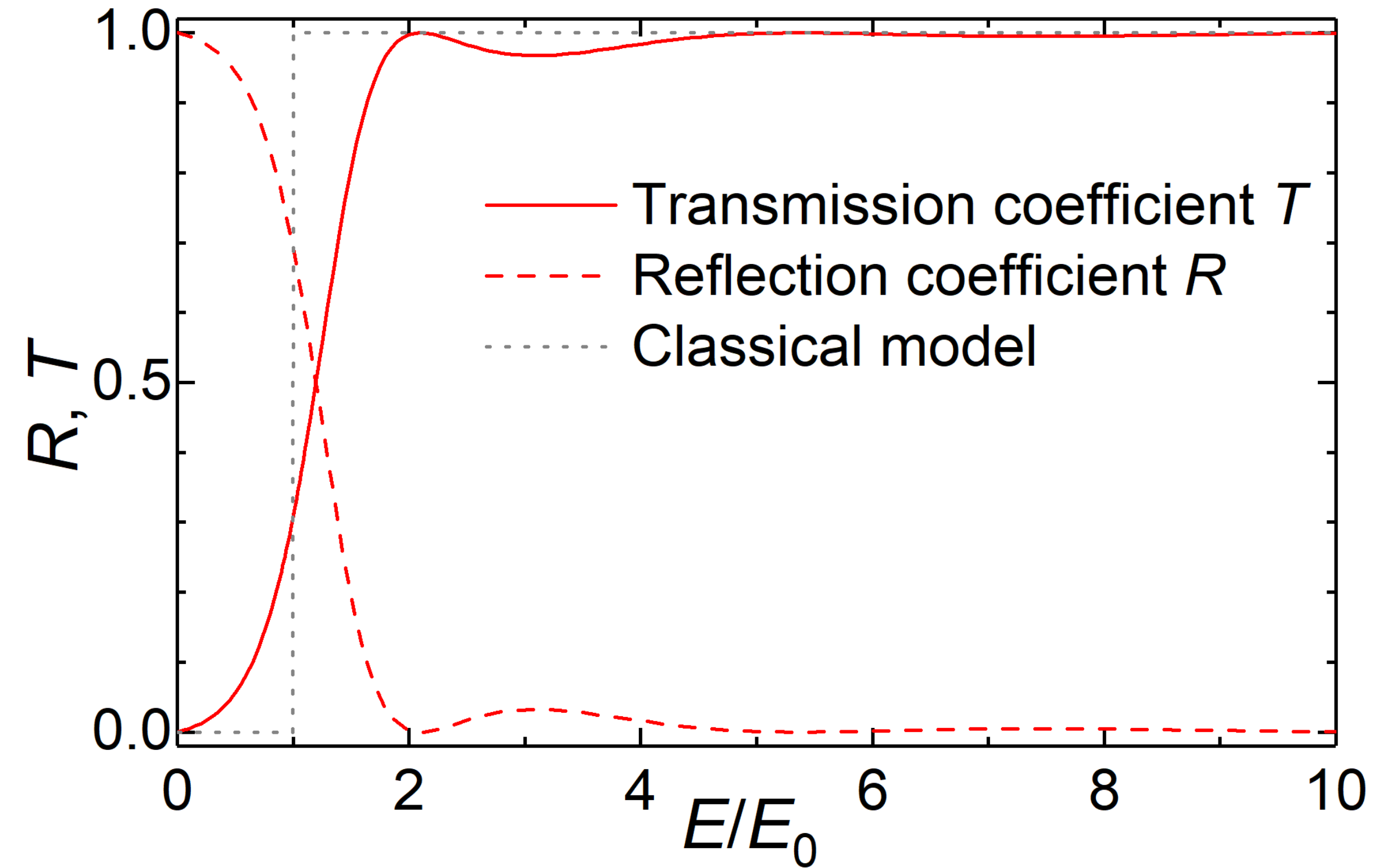
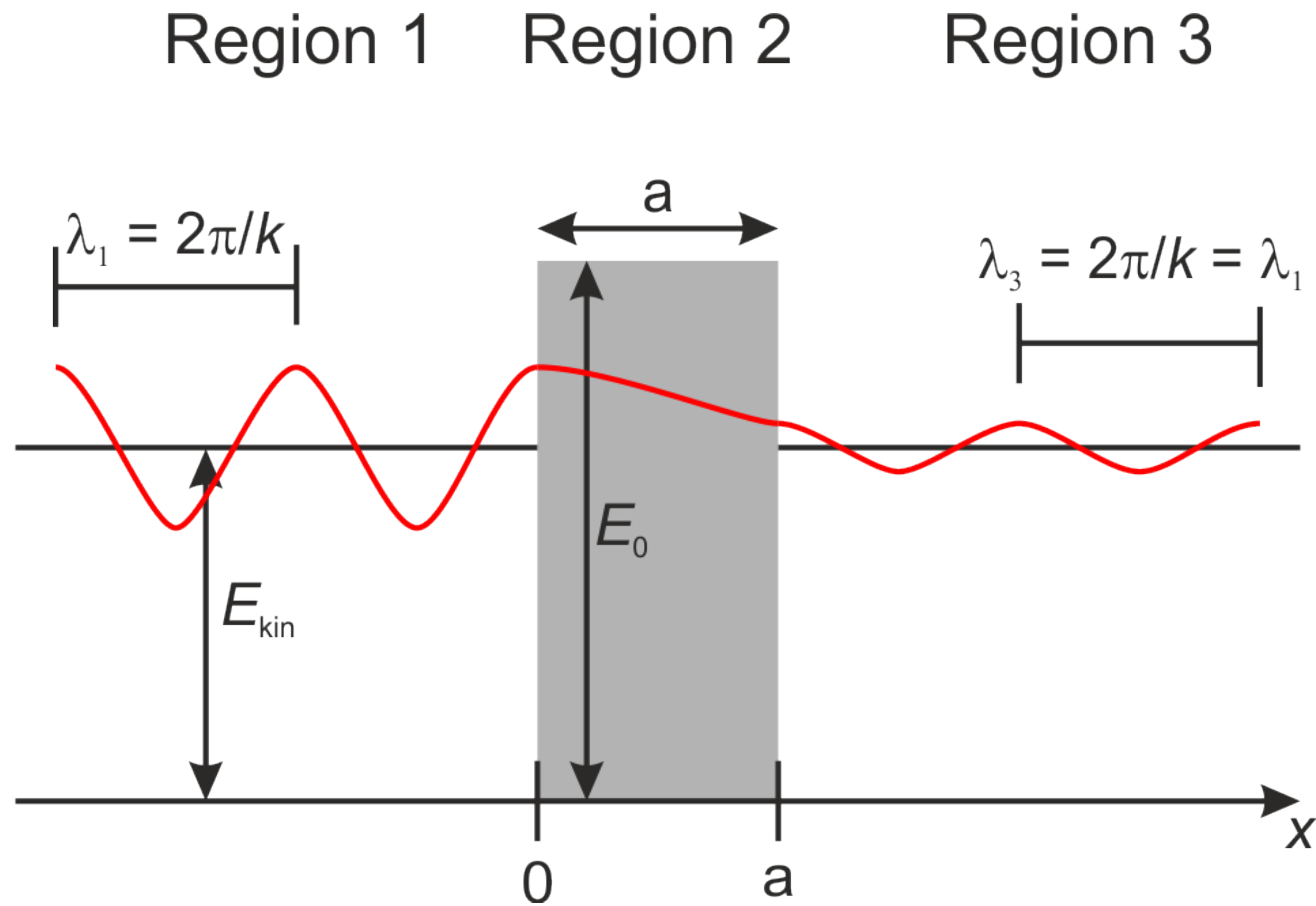
Recap - potential barrier $E_0 < 0 < E$



Recap - quantum tunnelling

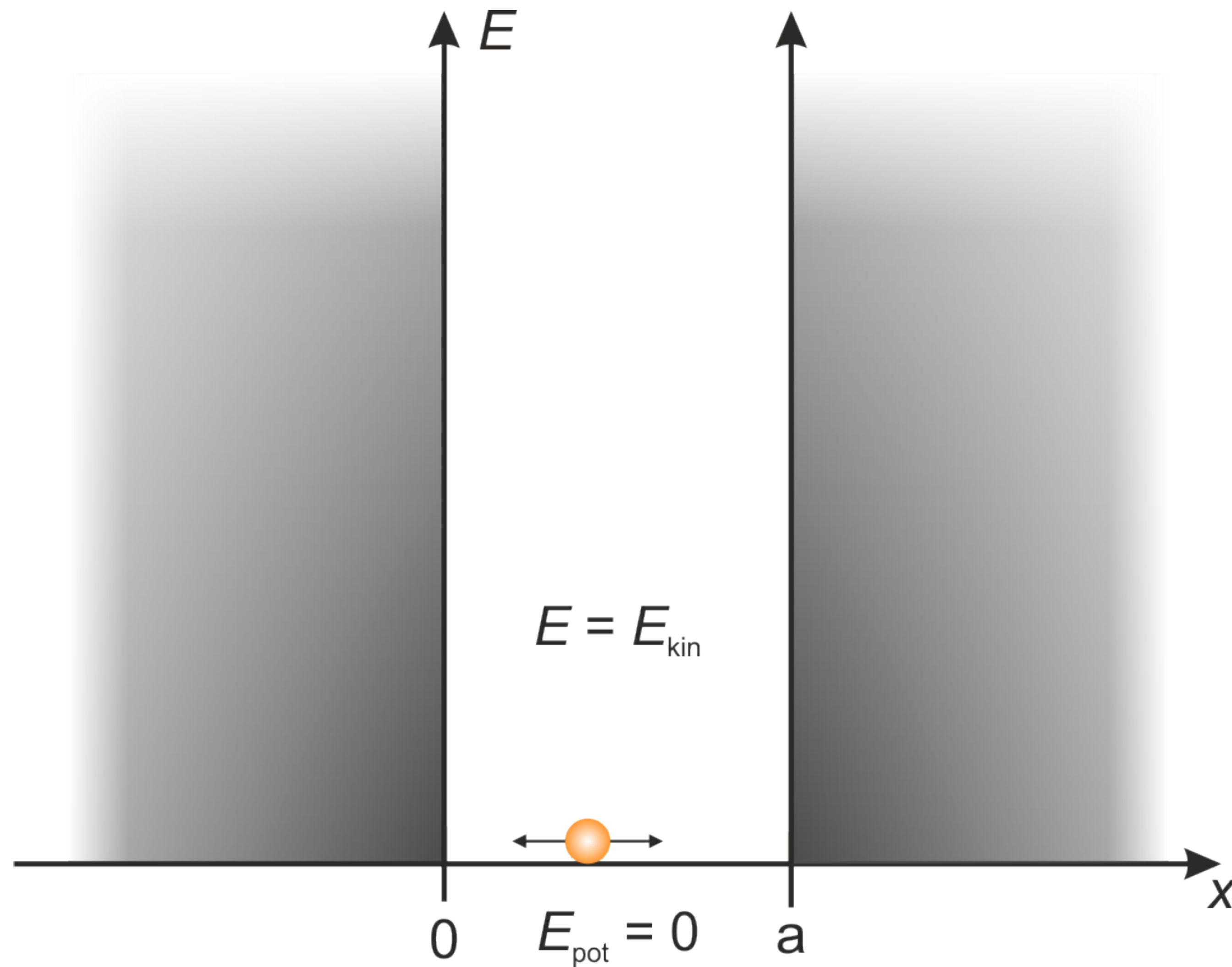


Recap - quantum tunnelling

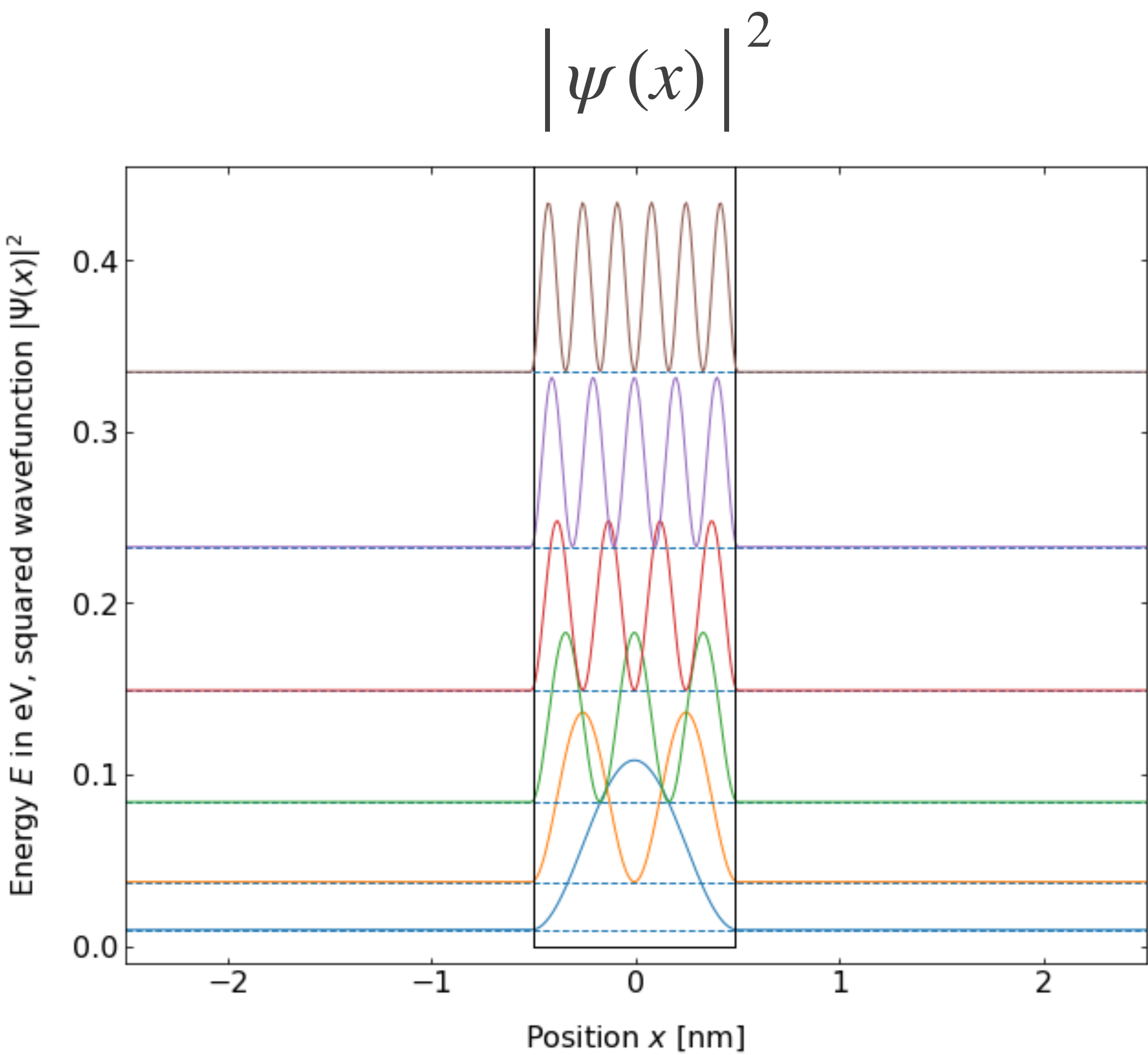
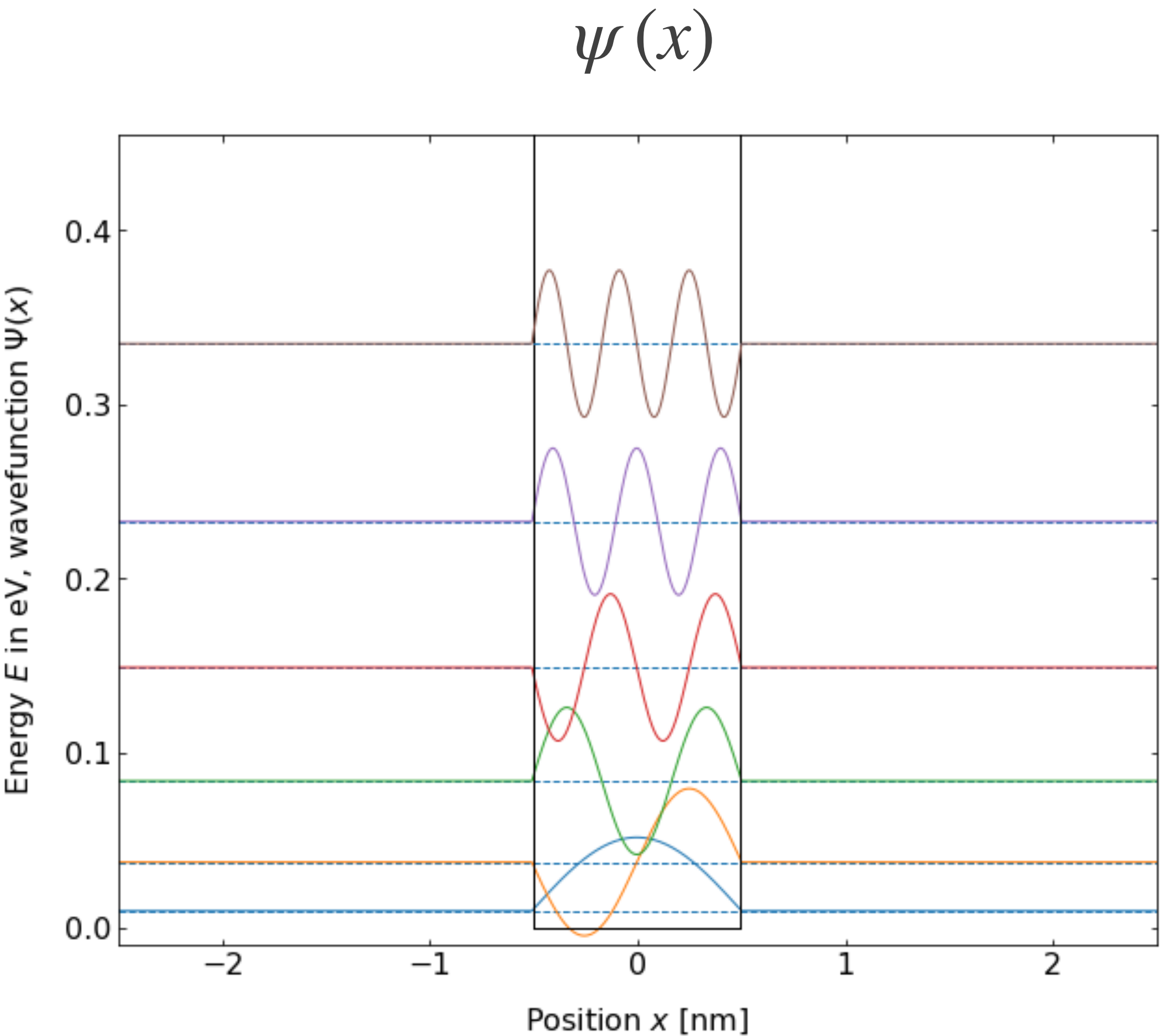


The potential well

The infinite potential well

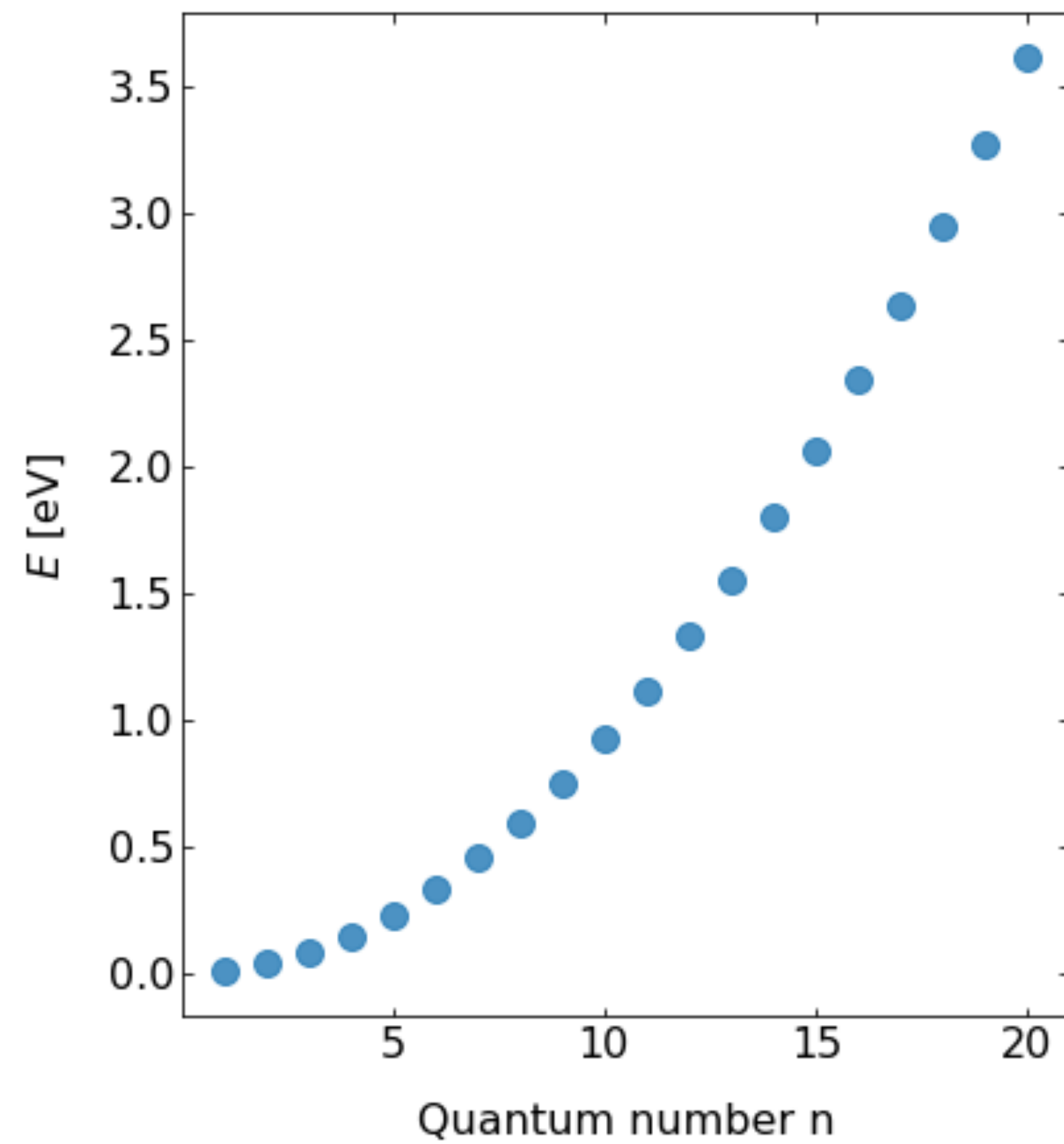


The infinite potential well - wave functions and probability density

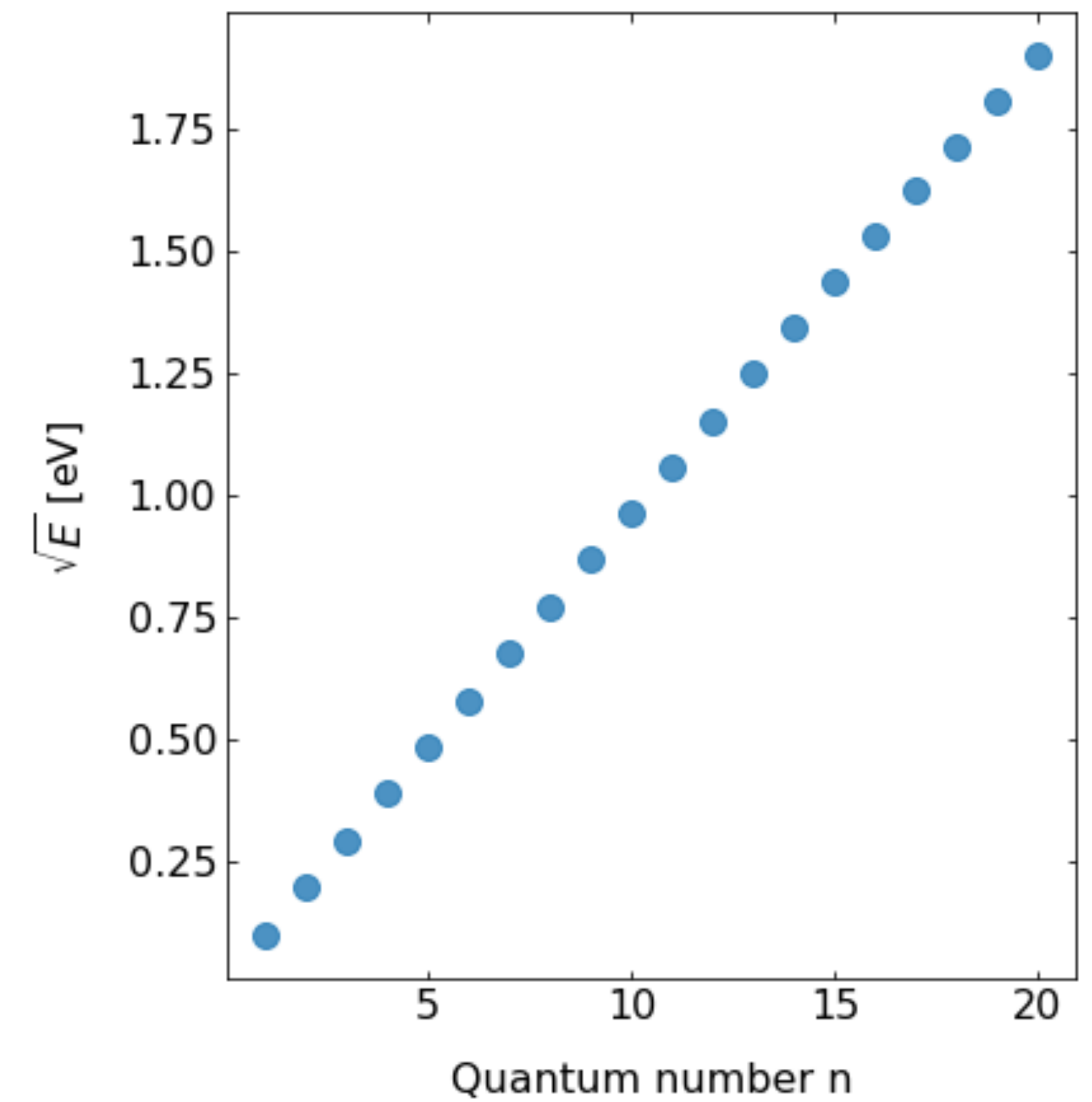


The infinite potential well - energy eigenvalues

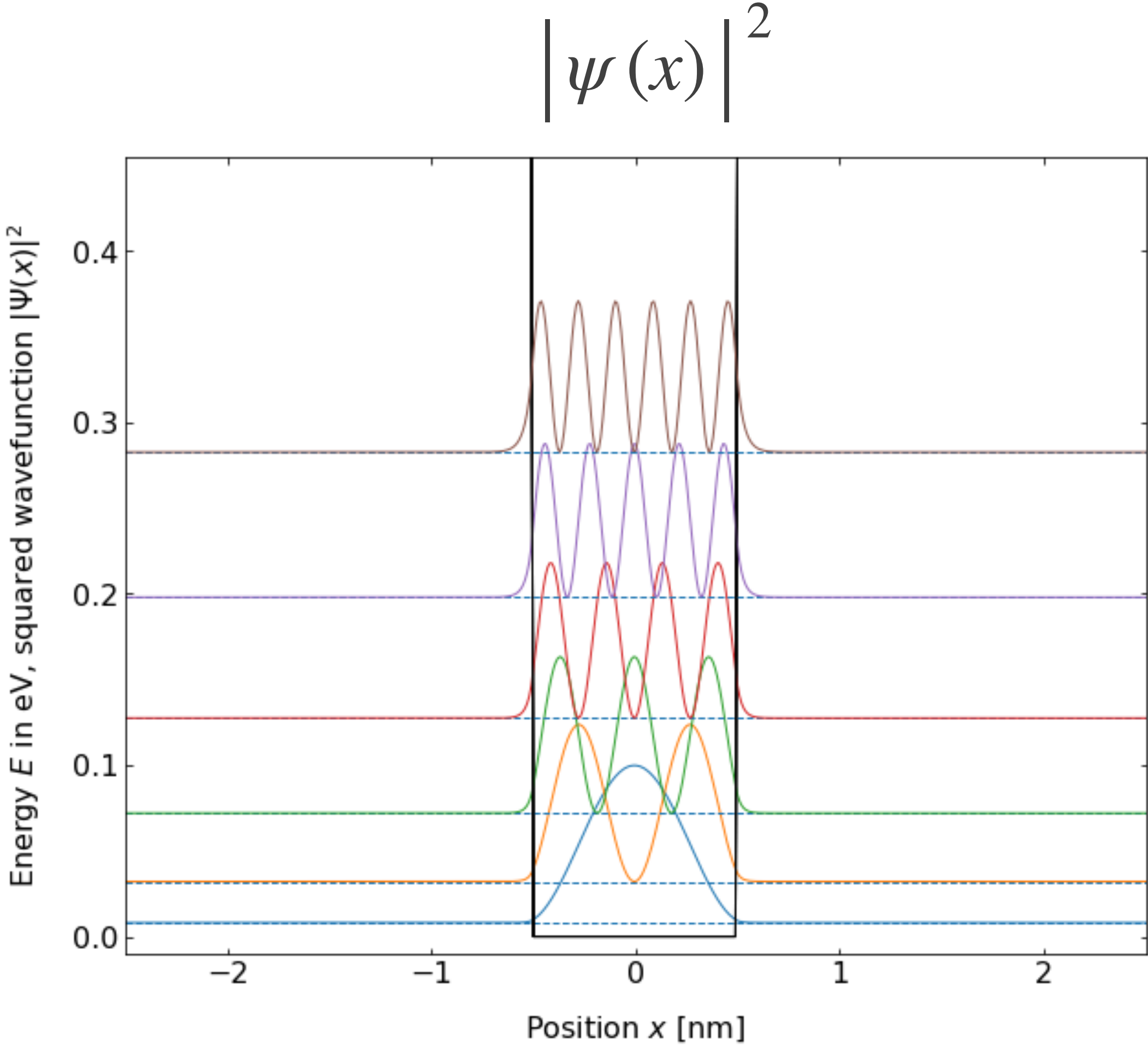
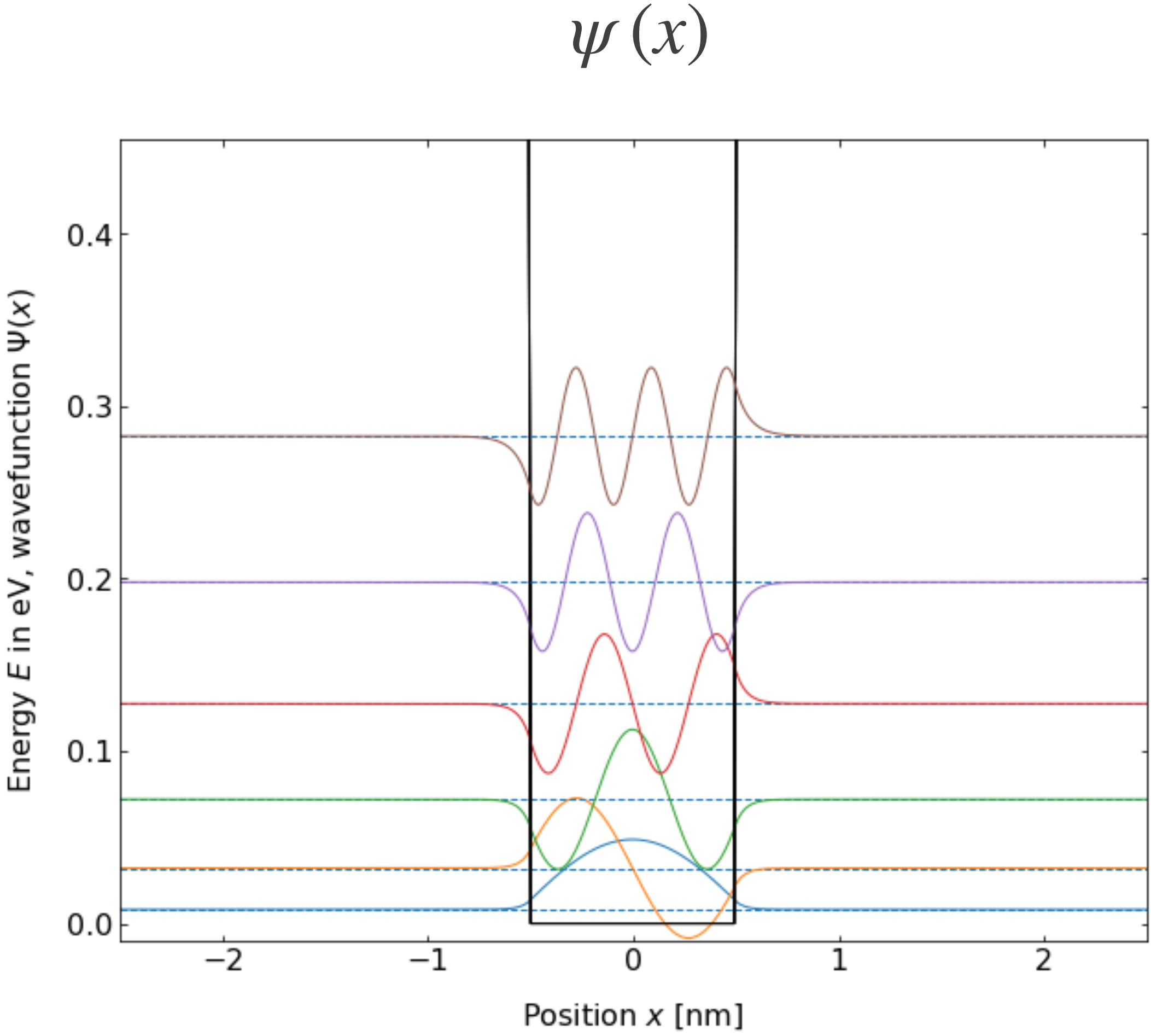
$$E_n$$



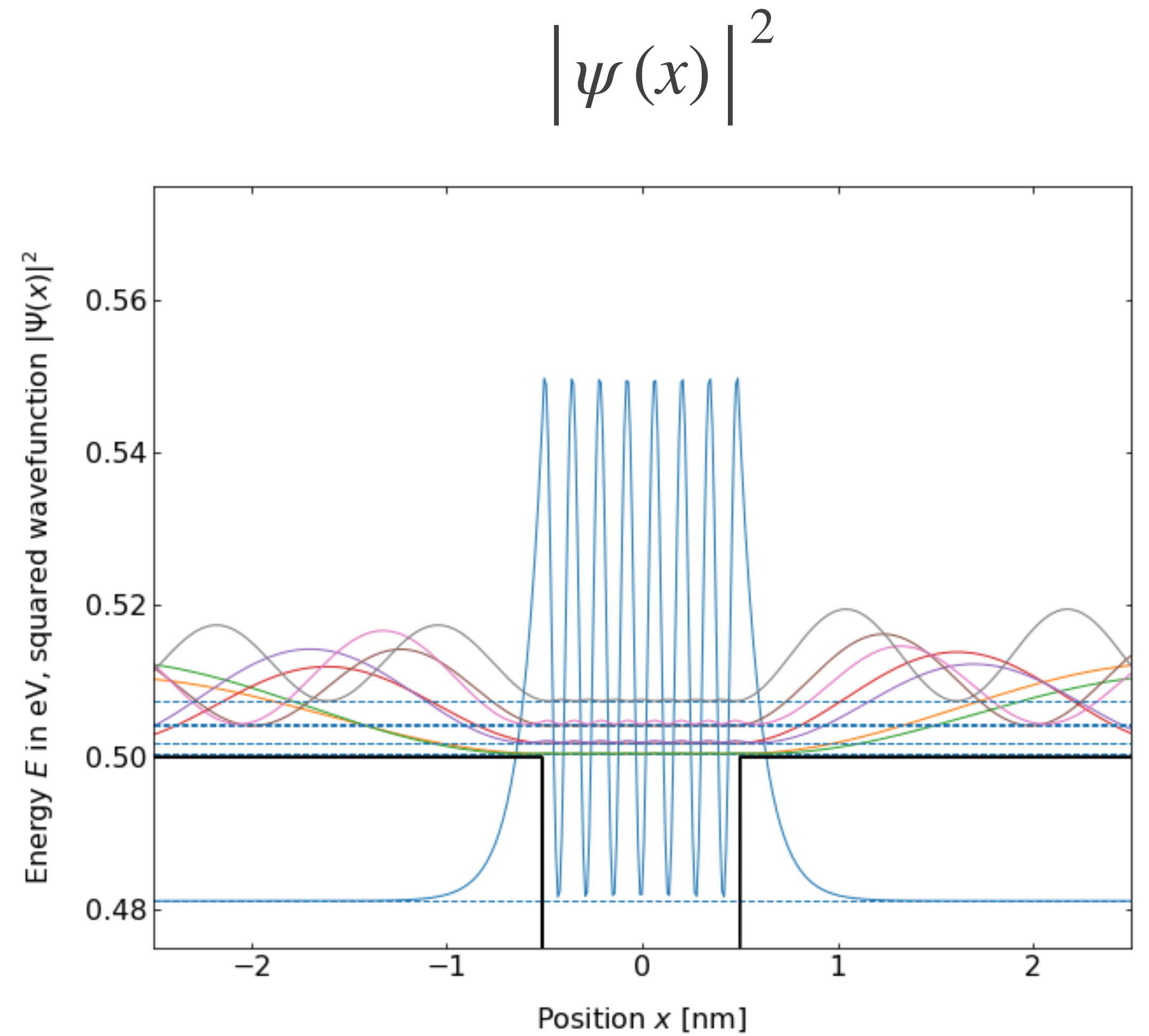
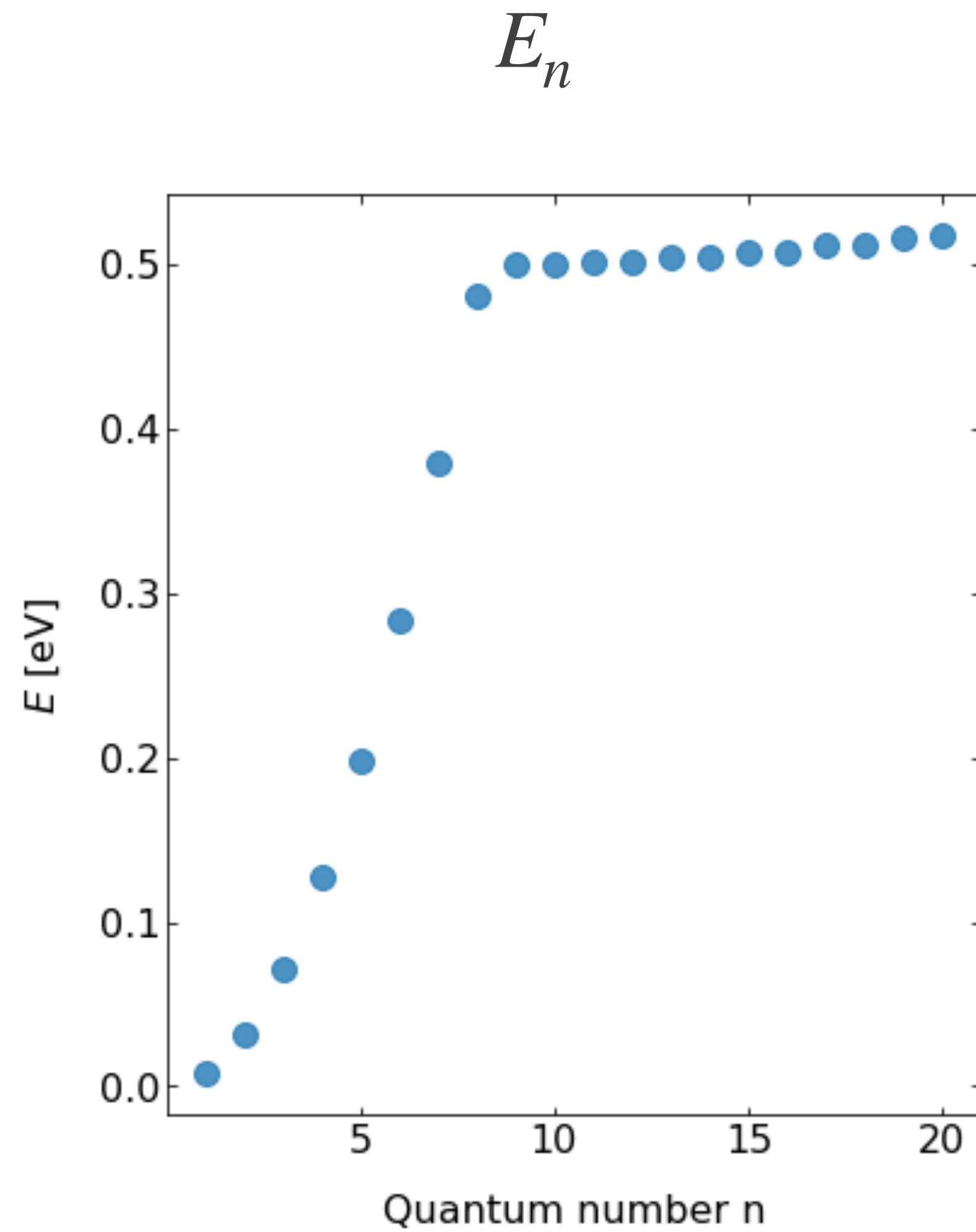
$$\sqrt{E_n}$$



The finite potential well - wave functions and probability density

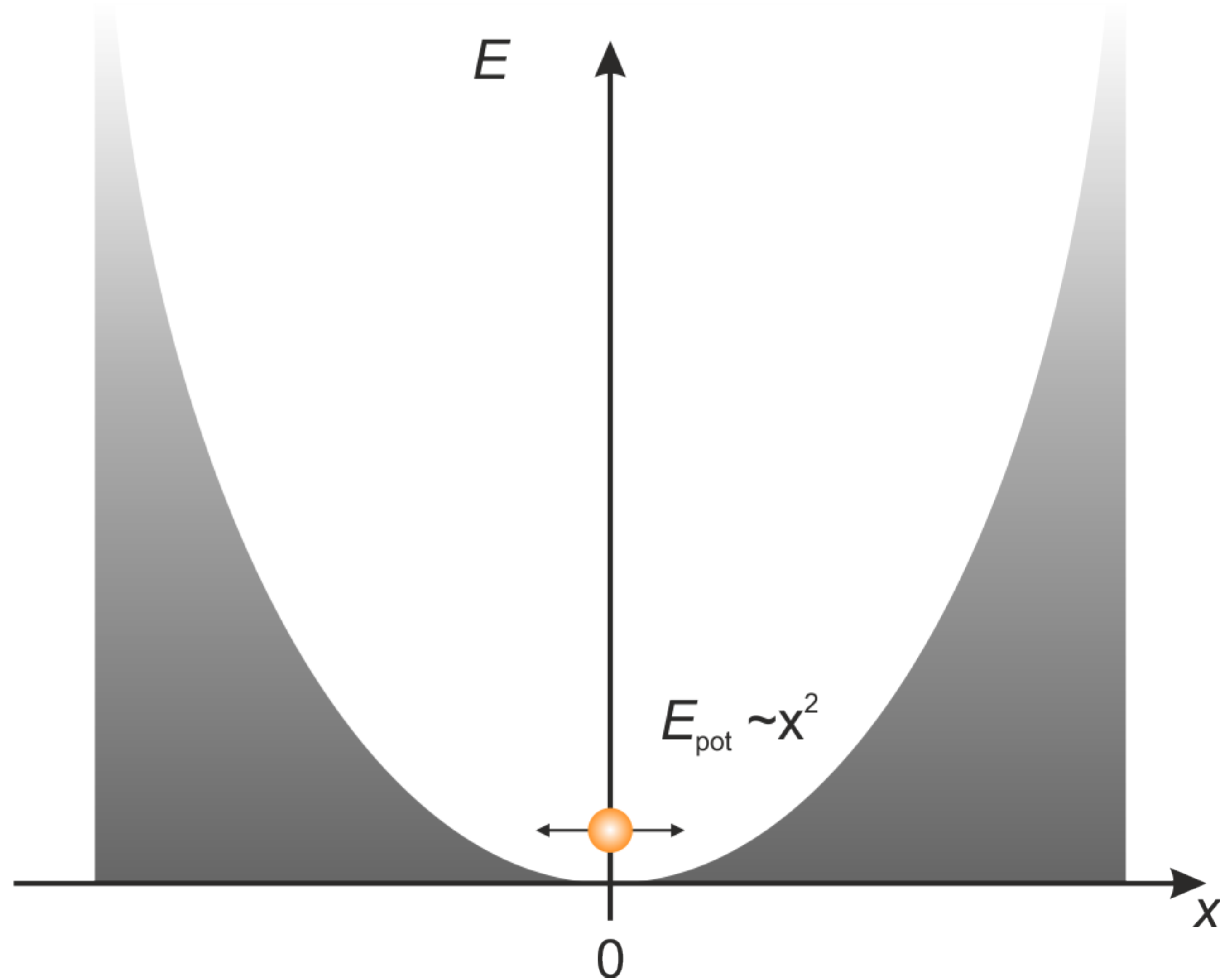


The finite potential well - energy eigenvalues



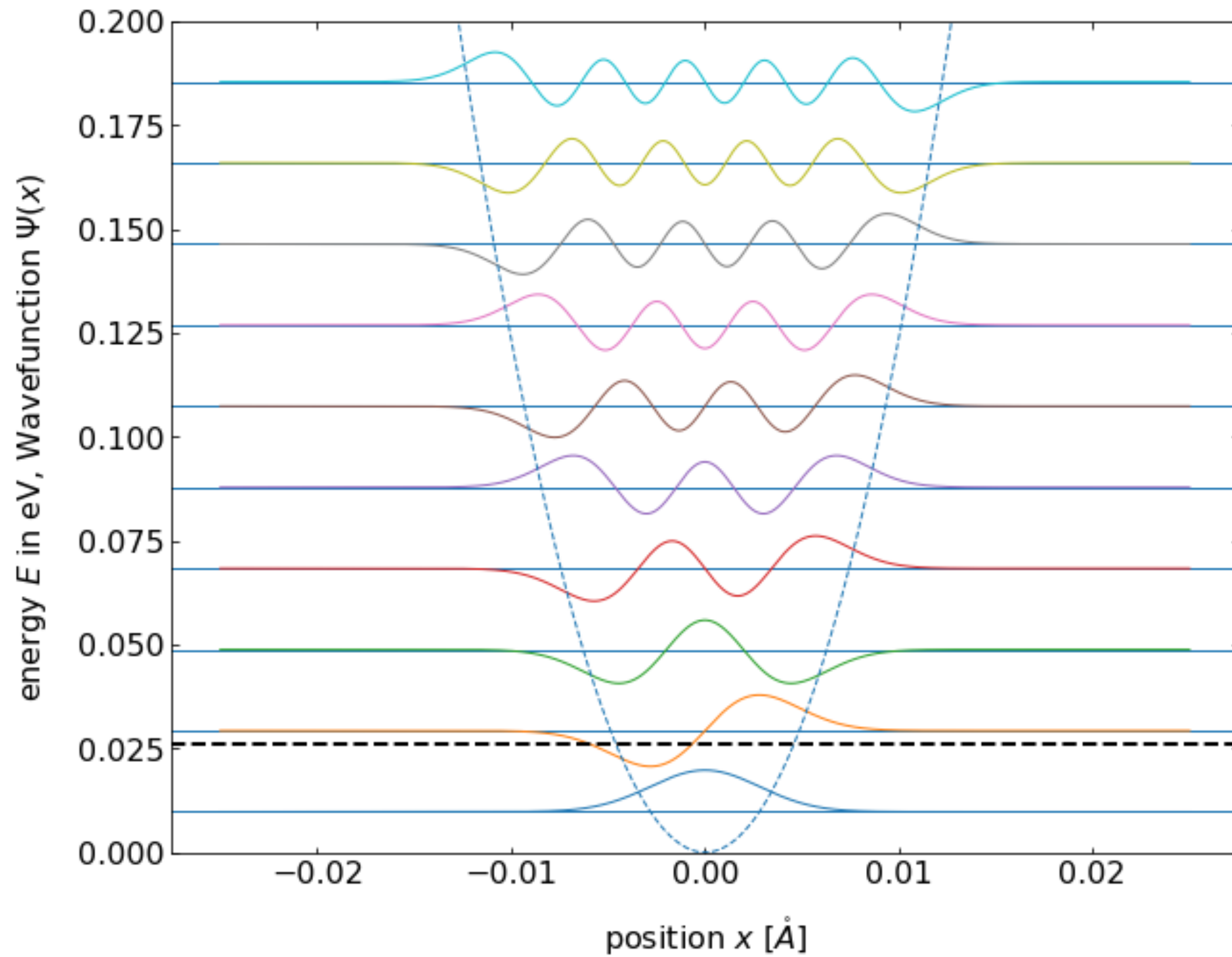
The harmonic oscillator

The harmonic oscillator

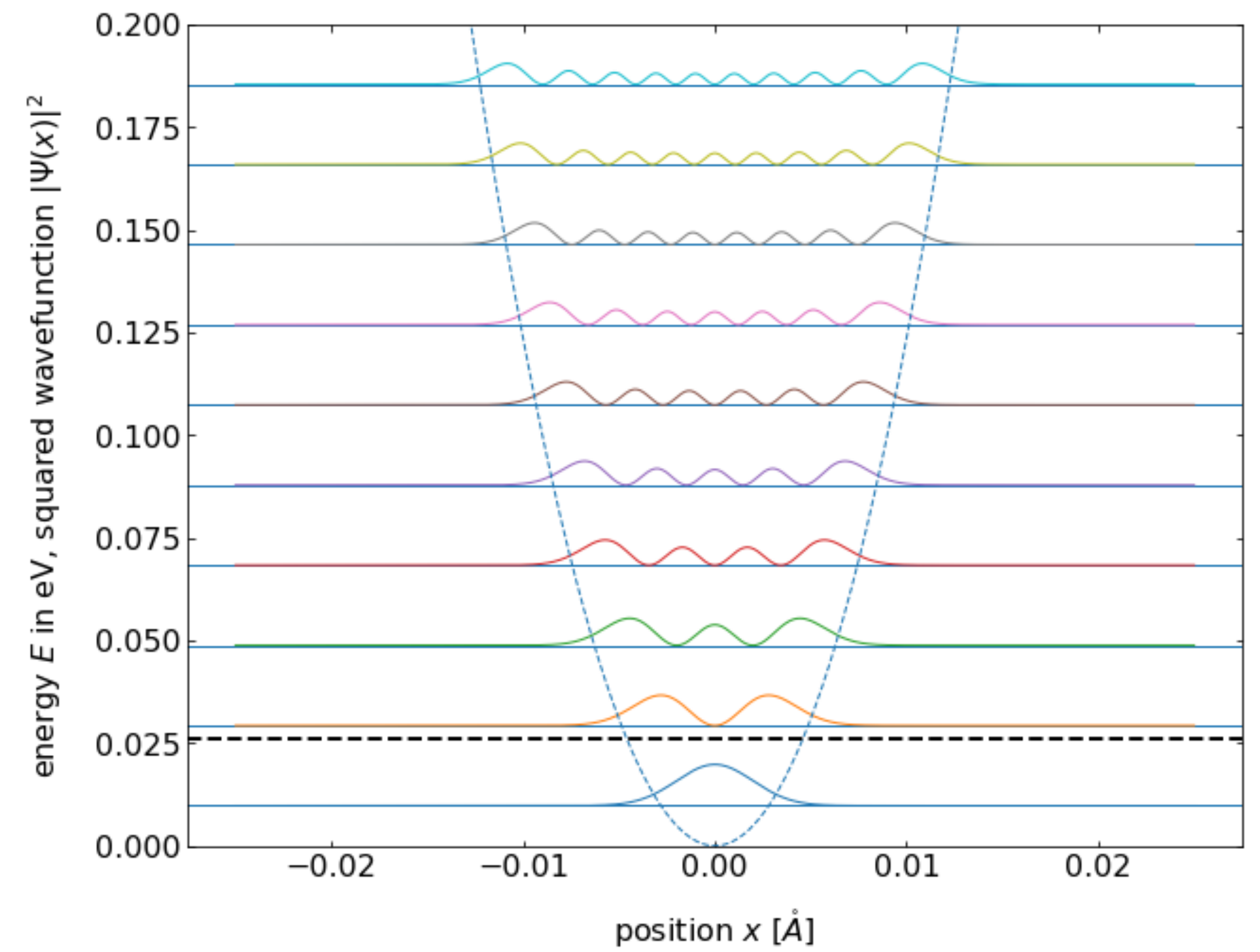


The harmonic oscillator - wave functions and probability density

$$\psi(x)$$



$$|\psi(x)|^2$$



The harmonic oscillator - energy eigenvalues

