

amplitude, probability
and intensity

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system

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measurement on a quantum system

$$|\Psi\rangle \quad \hat{P}$$

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measurement on a quantum system

$$|\Psi\rangle \quad \hat{I}_z$$

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measurement on a quantum system

$$\hat{I}_z |+\rangle = +\frac{1}{2}\hbar |+\rangle$$

$$\hat{I}_z |-\rangle = -\frac{1}{2}\hbar |-\rangle$$

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measurement on a quantum system

$$|\Psi\rangle = |+\rangle$$

$$|\Psi\rangle = |-\rangle$$

$$|\Psi\rangle = a |+\rangle + b |-\rangle$$

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measurement on a quantum system

$$a^*a + b^*b = 1$$

$$|a|^2 + |b|^2 = 1$$

$$|\Psi\rangle = a |+\rangle + b |-\rangle$$

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measurement on a quantum system

$$|\langle + | \Psi \rangle|^2 = |a|^2$$

$$|\langle - | \Psi \rangle|^2 = |b|^2$$

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measurement on a quantum system

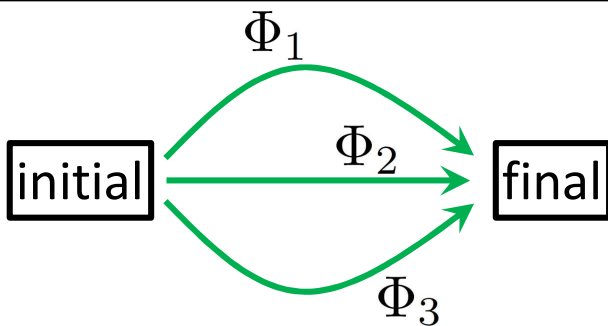
$$|\langle + | \Psi \rangle|^2 = |a|^2$$

$$|\langle - | \Psi \rangle|^2 = |b|^2$$

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process

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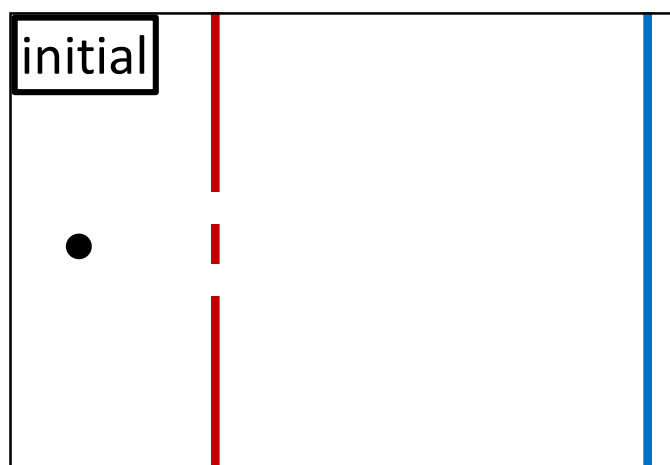
$$\Phi_{tot} = \Phi_1 + \Phi_2 + \Phi_3$$

$$|\Phi_{tot}|^2 = |\Phi_1 + \Phi_2 + \Phi_3|^2$$

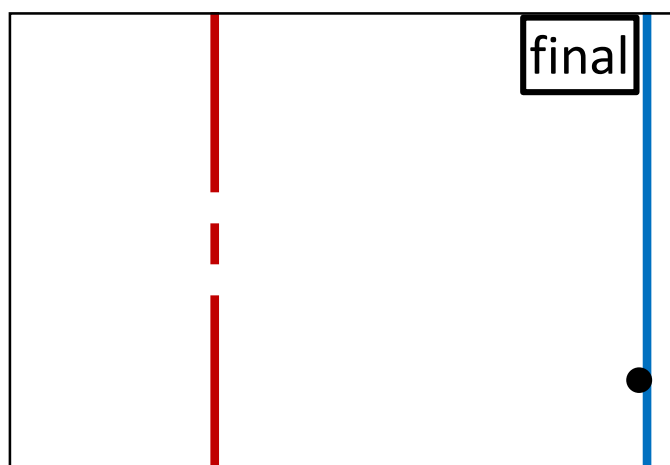
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example: two slits

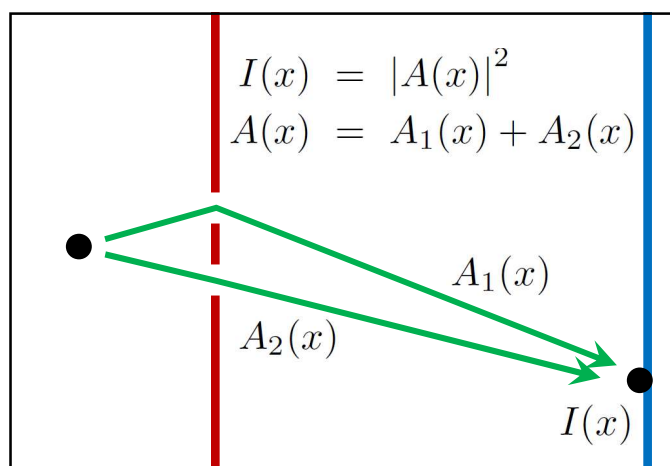
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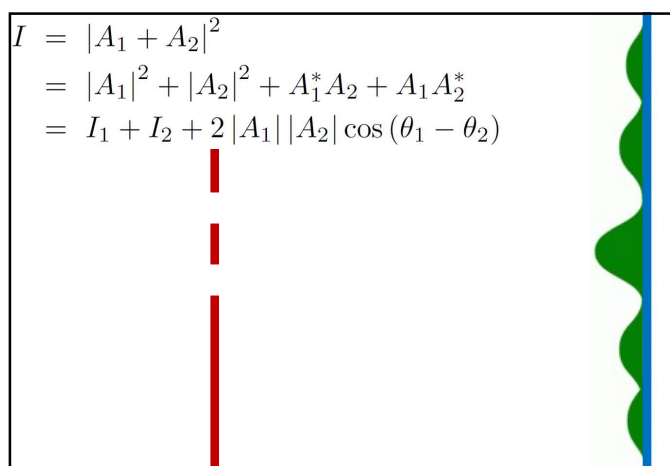
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