

## Quantum Physics

# On the Salecker-Wigner-Peres clock and double barrier tunneling

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In this work we revisit the Salecker-Wigner-Peres clock formalism and show that it can be directly applied to the phenomenon of tunneling. Then we apply this formalism to the determination of the tunneling time of a non relativistic wavepacket, sharply concentrated around a tunneling energy, incident on a symmetric double barrier potential. In order to deepen the discussion about the generalized Hartmann effect, we consider the case in which the clock runs only when the particle can be found inside the region *between* the barriers and show that, whenever the probability to find the particle in this region is non negligible, the corresponding time (which in this case turns out to be a dwell time) increases with the barrier spacing.

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