Relativistic tunneling times for Gaussian wave packets BRENT
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NARDI, Universidade Estadual de Ponta Grossa, Brazil — We investigated an aver-
age tunneling time, as suggested by the Salecker-Wigner-Peres clock, for a localized
particle described by the Dirac equation. Then we evaluate this average transmis-
sion time for a Gaussian wave packet incident on a square barrier. It was found that
the time does not saturate for large barriers, that is, the average time doesn't suffer
from the Hartmann effect. We also consider the contribution of the negative energy
components of the localized wave packet for the average time.

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