

Abstract Submitted
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The classical limit of coherent transport properties SAAR RAHAV,
PIET BROUWER, Laboratory of Atomic and Solid State Physics, Cornell University — We investigate the behavior of weak localization, conductance fluctuations, and shot noise of a chaotic scatterer in the semiclassical limit. Time resolved numerical results, obtained by truncating the time-evolution of a kicked quantum map after a certain number of iterations, are compared to semiclassical theory. Considering how the appearance of quantum effects is delayed as a function of the Ehrenfest time gives a new method to compare theory and numerical simulations. We find that both weak localization and shot noise agree with semiclassical theory, which predicts exponential suppression with increasing Ehrenfest time. However, conductance fluctuations exhibit different behavior, with only a slight dependence on the Ehrenfest time.

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