Abstract Submitted
for the MAR09 Meeting of
The American Physical Society

Scaling properties of delay times in one-dimensional random media[1] JOSHUA BODYFELT, Department of Physics, Wesleyan University, Middletown, Connecticut, ANTONIO MENDEZ-BERMUDEZ, Instituto de Fisica, Universidad Autonoma de Puebla, Puebla, Mexico, ANDREY CHABANOV, Department of Physics and Astronomy, The University of Texas at San Antonio, Texas, TSAMPIKOS KOTTOS, Department of Physics, Wesleyan University, Middletown, Connecticut — The scaling properties of the inverse moments of Wigner delay times are investigated in finite one-dimensional (1D) random media with one channel attached to the boundary of the sample. We find that they follow a simple scaling law which is independent of the microscopic details of the random potential. Our theoretical considerations are confirmed numerically for systems as diverse as 1D disordered wires and optical lattices to microwave waveguides with correlated scatterers.

[1]This research was supported by a grant from the United States-Israel Binational Science Foundation (BSF), Jerusalem, Israel.

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Date submitted: 22 Nov 2008 Electronic form version 1.4