

Abstract Submitted  
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**Effect of Phase-Breaking Events on Electron Transport in Single-Wall Nanotubes**<sup>1</sup> THUSHARI JAYASEKERA, PAVAN PILLALAMARRI, J.W. MINTMIRE, Department of Physics, Oklahoma State University, Stillwater, OK, VINCENT MEUNIER, Oak Ridge National Laboratory, Oak Ridge, TN — Existing ballistic models for electron transport in single wall nanotube systems will break down as the size of the device becomes longer than the phase coherence length of electrons in the system. V. Krstic, *et al.* observed experimentally that the current in a SWNT system can be regarded as a combination of a coherent part and a non-coherent part. We analyze this problem in detail following Buttiker's dephasing model. We investigate the effect of phase-breaking events on the electron transport in two-terminal single wall carbon nanotube systems, and discuss about more possible applications.

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